THE CULTIVATOR.

"TO IMPROVE THE SOIL AND THE MIND."

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Improvement of the Soil.

Improvement of Old Lands by Green Manuring.

EDITORS OF THE CULTIVATOR—Eight years ago, I tried the experiment of renovating a worn-out pasture-field by Green-Manuring, or, the plowing in of Green Crops. The highly satisfactory results of this experiment, and the general subject of improvements by this system of manuring, were so freshly brought to mind yesterday, in strolling over my field, that I now give you my experience, together with a brief collection of facts and principles touching the matter, from other sources.

The field which I experimented upon contains four acres; it is a light, thin, sandy loam, and is situated upon a high swell, over a mile from the barn, and difficult of access with a manure cart. It had been exhausted of all fertility by successive and injudicious croppings with rye, before it came under my management. A thin herbage, of little or no value, would show itself in the spring, only to be followed by a brown and most arid appearance at mid-summer. For two or three years, I occasionally passed over this land, thinking that the next season should witness some exploit for its renovation; but the great difficulty that continually presented itself to my mind, was, how to commence an improvement where there was no possibility of carting on any fertilizing substance, at a reasonable expense. I finally decided upon the following course:

In the latter part of June, when the little vegetation which the land produced was at its greatest height, it was nicely turned under, and the field rolled. I was quite sure, to start with, that the usual depth of plowing, namely, three to four inches, by which the skinning process is made finally complete, or receives its full finish, had been the practice here; and I therefore put the plow in to the depth of six inches, in order to expose a surface that had never before seen the day, which was thought to be of better quality than the first four inches. At any rate, it could not be poorer. Three pecks of buckwheat to the acre, were sown upon the rolled surface, and harrowed in. The crop was permitted to ripen, and gave an average yield of eight bushels per acre. As I had laid a plan of operations which were to extend through more than one season, and as I wished to test the merits of green manuring, I concluded to take off whatever of a scanty crop the land would naturally produce, in order to compare it with another crop, to be harvested at the end of the course. Otherwise, I should not have taxed this poor old pasture with a grain-crop, at all.

In May following, one bushel of buckwheat was sown on each acre, and when the crop had attained its blossom, it was turned under. A heavy chain, with one end attached to the plow-beam, immediately forward of the mould-board, and the other to the off-end of the evener, lopped down the tender buckwheat stalks, so that the plow covered them up pretty well. The field was then rolled; the same quantity of buckwheat again sown, and the crop managed precisely like the preceding one. Late in September, one and a-half bushel of winter rye was sown to the acre. The following spring, the rye presented a remarkable appearance. It stood so thick and heavy upon the ground that it required some resolution to plow it under, especially when all outsiders were pronouncing it an improvident and injudicious procedure. The rye was turned under. On the 20th of June, one bushel of buckwheat was again sown on each acre, together with grass seeds. It is risky sowing grass-seed at such a season of the year; but it was wet weather at the time, and we had a sufficient succession of showers through the summer to insure a good 'catch' of grass. This crop ripened, and gave an average yield of 18 bushels per acre,—being an increase of over 100 per cent. over the first crop. It is entirely safe to say, that one-half an acre has produced more value in feed since, than the four acres did previous to plowing in the green crops. I shall never be at a loss to know what to do with similar fields hereafter.

A number of interesting communications upon the subject of green crops for manure, have been published in our Agricultural Journals. With your permission, I will cite the following interesting facts from two of them:

In the 9th vol., *N. E. Farmer*, W. Buckminster, Esq., of Framingham, Mass, states that in May, 1828, he plowed up three and a-half acres of poor pasture. It had been so reduced by a former owner, that 10 acres did not afford sufficient pasturage for one cow through the season. Immediately after plowing, a bushel of buckwheat to the acre was sown, and in six weeks, the crop was rolled down in the direction he intended to plow, and then turned under, and the field sowed as before. In the latter part of August, the second crop was served like the first, and the land then seeded to clover, herds-grass and red-top. The next season, the field was mowed, and although the grass was considerably winter-killed, it yielded a ton of hay to the acre. The field was afterwards pastured, and he never had any pasture-ground yield so well before. He thought the green crops improved the land as much as a good dressing of manure.

In the 12th vol., *N. E. Farmer*. John Keely, of Haverill, Mass., gives an account of remarkable crops of rye, which he had raised by the use of green crops for fertilising the soil. The land on which the experiments were made, is situated on the Merrimack river; the soil a sand, approaching to loam as it recedes from the river. It is altogether too light for grass. The crops found most profitable to raise on it, were winter rye, and Indian corn;—the crops of rye ordinarily yielding 8 to 12 bushels, and of corn, 13 to 30 bushels, to the acre.

The land on which he raised a premium crop of rye, in the season of 1832, had for three or four years previous, been planted to corn; and owing to the extent of

his tillage land, had not received more than four or five loads of manure to the acre, each season. The weed commonly called charlick, (charlock?)—which very much infested the land,—was suffered to attain a rank growth in the spring of 1831, and about the 20th of June it was plowed in. Another crop sprung up and covered the ground, and in August, that was plowed in also. A third crop soon appeared, which, in the latter part of September, was served like the others. At this time the rye was sown in the usual manner, namely, a narrow strip of land was plowed, the seed sown immediately upon the furrows, and harrowed in, and so on, until the whole was completed. Sowing the seed immediately after the plow, was considered very advantageous to the crop. The soil then being moist, caused the seed to spring immediately, and gave a forwardness and vigor to the plants, which they ever after maintained. The next year, 1832, the rye was harvested at the usual season. The land contained one acre and thirteen rods, and yielded forty-six bushels and three pecks. A field of four acres, similarly managed in 1828, gave 33¼ bushels of rye to the acre.

Mr. Keely remarked that experience and close observation upon the management of green crops, had convinced him that three things, among others that might be more obvious, were essential to a successful result: First, the absolute necessity that the plow used be of good construction: Second, that some method be devised to prostrate the crop before the plow, or it would not be covered:—He used a wooden roller, about four inches in diameter, and sixteen inches long, fixed on the end of the plow beam, in a frame temporarily put on for the purpose.—Third, it had been found necessary to plow the land soon after a rain,—this was very light, sandy land,—while it is moist, or the plow would crowd the furrow, instead of turning it handsomely. He also considered it advantageous to roll the land, after each plowing.

The principles by which lands are improved by turning in green crops, are clearly set forth by Prof. Johnston, in his usually happy way. I cannot resist an inclination to quote briefly from his lectures:—

"The plowing in of green vegetables on the spot where they have grown, may be followed as a method of manuring and enriching *all* land—where other manures are less abundant. Growing plants bring up from beneath, as far as their roots extend, those substances which are useful to vegetation—and retain them in their leaves and stems. By plowing in the whole plant, we restore to the surface what had previously sunk to a greater or less depth, and thus make it more fertile than it was before the green crop was sown.

"This manuring is performed with the least loss by the use of vegetables in the green state. By allowing them to decay in the open air, there is a loss both of organic and of inorganic matter—if they be converted into fermented (farm-yard) manure, there is a large loss, and the same is the case if they are employed in feeding stock,* with a view to their conversion into manure. *In no other form can the same crop convey to the soil an equal amount of enriching matter as in that of green leaves and stems.* Where the *first* object, therefore, in the farmer's practice is, so to use his crops as to enrich his land—he will soonest effect it by plowing them in in the green state.

"But it is deserving of separate consideration, that green manuring is especially adapted for improving and enriching soils which are poor in vegetable matter. The principles on which living plants draw a part—sometimes a large part—of their sustenance from the air, have been discussed, and I may presume that you sufficiently understand the principles, and admit the fact. Living plants, then, contain in their substance not only all they have drawn up from the soil, but also a great part of what they have drawn from the air. Plow in these living plants, and you necessarily add to the soil more than was taken from it—in other words, you make it richer in *organic* matter. Repeat the process with a second crop, and it becomes richer still—and it would be difficult to define the limit beyond which the process could no further be carried."

I would never depend upon green manuring alone, on land that I intended to tax with grain crops. In such a case, some additional saline substances would need to be added, which this system of manuring could not supply, in order to support those crops and maintain the fertility of the soil. The possession of light and poor, sandy or gravelly lands, is usually attended with limited means for making or *purchasing* manure; and these soils are always materially deficient in vegetable matter. It has therefore been my impression, for years, that, were I to become the owner of such a farm, I should use green crops extensively, in connection with other manuring, to invigorate my poor soil, and supply it speedily with this essential material—vegetable matter.

In the case of worn and exhausted pastures,—such as the one I have described,—which are level enough to plow, and where a good portion of the droppings of the cattle remain on the land, a resort to green manuring will doubtless increase and perpetuate their fertility. In my immediate vicinity, pasturage is worth from 45 to 50 cents a week for each cow. If my pasture ranges were five or ten times larger than they are, I could readily obtain these prices. With me then, a considerable outlay for increasing the productiveness of these lands is judicious. In other sections, where the various conditions I have named are all right, I would confidently recommend the practice of turning in green crops, as a cheap, effectual and speedy method for increasing t e productiveness and profit of worn-out pastures. F. HOLBROOK. *Brattleboro', Vt., May*, 1849.

* The manure voided by an animal contains very much less solid matter than the food it has consumed. For every 100 lbs. of dry fodder, the horse or the cow will give on an average, 46 lbs. of *dry* manure. Lec. 18, Sec. 13.

Action of Lime.

Chemical investigation has led to the idea that one of the effects of lime, when applied to the soil, consists in its rendering soluble certain mineral substances which are essential to the growth and perfection of vegetation. Granite, trap, and slate contain potash, which is liberated by caustic lime. There is good reason to believe that this action of lime is of great importance, and that in many instances, it is one of the principal causes of the increased productiveness, which the application of this substance imparts to the soil. The following remarks, from a valuable paper by Prof. JOHNSTON, serve eminently to illustrate this subject, and will be read with profit.—EDS.

The decaying vegetable matter in the stems, roots, and leaves of plants, which form the so-called humus of the soil, contain a large proportion of the inorganic matter which was necessary to their existence in the living state. As they decompose, this inorganic matter is liberated. By promoting this decomposion, therefore, lime sets free this mineral matter, and provides at once abundant organic and inorganic food to the growing plant. The result of the action of lime is no less important in reference to its fertilising quality than that by which it causes the production of those numerous changes in the purely organic matter of the soil to which I have already adverted.

If the vegetable matter decay rapidly, it will supply in abundance all the materials, both organic and inorganic, which new races of plants require to form their entire substance. If it be in an inert state, or decom-

pose slowly, the food it contains remains locked up and comparatively useless to vegetation. In quickening the decay of this inert or slowly decomposing matter, it is easy to see, therefore, how lime should render the land more fertile, and should do so more sensibly where vegetable matter is more abundant.

The mineral and rocky fragments in the soil are acted upon in a similar manner.

Among the earthy constituents of soils, there often exists fragments of feld-spar and other minerals, derived from the granitic and trap rocks, as well as portions of the slaty and other beds from which the soils have been formed, and which, as they crumble down, yield more and more of those inorganic substances on which plants live.

The decomposition of these minerals and rocks proceed more or less rapidly under the conjoined action of the oxygen, the carbonic acid and the moisture of the atmosphere. But the presence of lime promotes this decomposition, and the consequent liberation of the inorganic substances which the rocks contain.

The silicates of potash and soda are among the most important compounds which these minerals and rocky fragments contain. These silicates, after being heated to redness with quick-lime, readily yield a portion of their potash or soda to water poured upon the mixture. The same result follows, but more slowly, when without being heated, the silicates and the lime are mixed together into a paste with water, and left for a length of time at the ordinary temperature of the atmosphere. It is reasonable, therefore, to suppose that, in the soil of our fields, a similar decomposition will slowly take place when quick lime is mixed with it. It will take place, also, though still more slowly, when lime is added to it in the form of carbonate.

By some, the liberation of potash and soda in this way is supposed to be the most important action exercised by lime in rendering the land more productive. With this extreme opinion I do not agree, though it must be conceded, I think, that in numerous instances a certain amount of benefit must follow from the chemical action it is thus fitted to exercise.

I have spoken of lime as liberating the inorganic constituents of the decaying vegetable matter of the soil. The stalks of the grasses, and the straw of our corn-bearing plants also contain silicates of potash and soda, which lime sets free in hastening the decomposition of the vegetable matter of which they form a part. Besides liberating, it further decomposes these silicates, as it does those of the minerals in the soil, and sets their potash and soda free to perform those important functions they are known to exercise in reference to the growth of plants. I am inclined to consider this part of the action of lime as of nearly equal importance to vegetation in many instances, with that which it exercises upon the mineral silicates.

While the potash or soda is set free in a soluble state, the lime unites with a portion of silica, forming a silicate of lime of which traces are to be met with in nearly all soils. This silicate, again, is slowly decomposed by the agency of the carbonic acid of the atmosphere and of the soil, as I have already explained when speaking of this compound as one of the causes of the known fertility of soils formed from the decay of trap rocks.

Potash and soda exist sometimes in considerable quantity, in our stiff clay soils, in combination with the silica and alumina, of which they chiefly consist. From their extreme tenacity, the air is in a great measure excluded from these soils, and hence chemical decomposition proceeds in them very slowly. The addition of lime alters their physical character, and, by making them more open, admits the air, and thus promotes its decomposing action upon them. But it acts chemically also, in the same way as it does upon the silicates already spoken of, and thus compels them to give up more freely to the roots of plants those mineral substances by which their growth is to be made more luxuriant.

Action of Lime on Salts of Iron, Magnesia and Alumina.—*Salts of Iron.*—Lime, either in the mild or in the caustic state, possesses the property of decomposing the sulphate and other saline compounds of iron, which especially abound in moorish and peaty soils, and in many localities so saturate the subsoil, as to make it destructive to the roots of plants. Sprengel mentions a case in which the first year's clover always grew well, while in the second year it always died away. This, upon examination, was found to be owing to the ferruginous nature of the subsoil, which caused the death of the plants as soon as the roots began to enter into it.

When land is rendered unproductive by the presence of salts of iron, a dressing with lime will bring the land into a wholesome state without other aid than those of the drain and the subsoil plow. If sulphate of iron be the cause of the evil, the lime will combine with the acid and form gypsum, (sulphate of lime,) while the *first* oxide of iron which is set free will, by exposure to the air, be converted into the *second* or red oxide, in which state this metal is no longer hurtful to vegetation.

The drain and the subsoil plow are useful auxiliaries to the lime in lessening the injurious effects of the compounds of iron, because they allow the rains to descend and gradually to wash away the noxious matter which has accumulated in the under soil—because they permit the descending water to carry with it portions of the lime in a state of solution, and thus to spread its good effects through the whole soil—and because they admit successive supplies of air as deep as the bottom of the drains, by which, while the action of the lime is promoted, those other good effects also are produced which the oxygen of the atmosphere can alone accomplish. In fact, unless an outlet for the surface water be thus provided beneath, by which the lime may be enabled to descend, and the rains to wash away slowly the noxious substances from the subsoil, even the addition of a copious dose of lime will only produce a temporary improvement.

Salts of magnesia and alumina.—Lime decomposes also the sulphates of magnesia and alumina, both of which, but especially the former, are occasionally found in the soil in too large proportions, and, being very soluble salts, are liable to be taken up by the roots in such quantity as to be hurtful to growing plants. With the sulphuric acid of these salts the lime forms gypsum, as it does with the acid of sulphate of iron when this salt is present in a soil to which it is added: besides removing the evil effects of these very soluble sulphates, therefore, it exercises the beneficial action which gypsum is known to exhibit upon many of our cultivated crops.

Alumina has the property of combining readily with many vegetable acids, and in the clay soils exercises a constant influence—though more feeble in degree than that of lime—in persuading organic matter to those forms of decay in which acid compounds are more abundantly produced. Hence, clay soils almost always contain a portion of alumina in combination with organic matter. These organic compounds are decomposed by lime, and, by the more energetic action of this substance, their constituents are sooner made available to the wants of the new races of plants.

Charcoal and Peat.

Whatever opinions may have been formed in relation to plants supplying themselves sufficiently with carbon and nitrogen from the atmosphere, we think careful observation has shown that the application of carbonaceous and ammoniacal substances is beneficial to the growth of plants; and to this conclusion we believe the

public mind will come at last. It is admitted by all, that plants feed on carbon and nitrogen; and why should we not supply them with their appropriate food?

Indeed, it is but a few years since the virtnes of charcoal as a manure, and as a medium of *catching* ammonia, were much vaunted by some of those who now consider it of little or no value; they even went so far as to declare, that it was, of all others, "the cheapest and best manure" for this country.

Although the writer of this never indulged a belief in the wonderful properties of charcoal, as put forth by some enthusiastic and sanguine theorists, he has never doubted its actual value. He was convinced of this before he had ever seen any theory on the subject derived from chemical investigation. He had seen the effects of the substance on different crops; he had seen the yield of Indian corn increased ten bushels to the acre, simply by putting a shovel-full of coal dust from the beds of coal-pits, in each hill. He had seen a similar effect from its use on potatoes; the difference in both crops, between the charcoal dust and nothing, could be seen to a row or a hill, during the whole period of growth. Effects equally marked, were seen from the spreading of coal dust on moist grass land; the application of about three hundred bushels to the acre, having increased the quantity fifty per cent., and greatly improved its quality. The beds of old coal pits, which had been made more than twenty years, were found to produce a sward so much thicker and luxuriant than the surrounding ground, as to attract attention at a considerable distance, and the herbage was so much sweeter that these spots were more closely grazed by stock. The same superiority of these spots over the rest of the field, was seen when the land was plowed and put to any kind of grain; the straw was brighter, thicker on the ground, and the grain generally heavier.

But it may be said that the good effects in the cases above cited, were owing to the ashes or alkalies, produced in burning the coal, and the action of heat on the earth. To this it may be replied that spots of ground where heaps of wood had been burned and the ashes spread around, soon ceased to produce crops of extra yield; and while those on which coal dust had been spread, produced rich harvests, the former were covered with moss.

Nearly the same effects have been produced by the use of fine charcoal, from iron works and other places where quantities of coal had been gathered.

It is proper to say that the greatest benefits we have seen from the use of charcoal, have generally been on rather moist land. On very dry soils, we have seldom seen so favorable effects, except in moist seasons. Considerable moisture is evidently necessary to reduce the coal to a soluble state.

Some have supposed that charcoal acted wholly as an absorbent of ammonia. We are far from denying its effect in this particular, though we see no reason to believe that this is its only use as a manure. We do not see why it may not, as well as other carbonaceous matters, furnish carbonic acid to plants. Its decomposition is slow; but under the action of air and moisture it gradually wastes away; it is *dissolved*, and chemists assure us that charcoal, dissolved and combined with oxygen, forms carbonic acid, which plants are known to feed upon.

Peat or "muck" is similar in composition to charcoal, but is more easily decomposed. When muck is applied to the soil, it is evidently dissipated with every crop that is taken, and finally disappears entirely. It is so with charcoal, only the decay is slower.

The expediency of using charcoal as a fertilizer, must of course, depend on circumstances. Like other valuable substances, it may be "bought too dear;" and its cost in many situations is probably too great to admit of its profitable use as an ordinary manure. But charcoal *waste* may frequently be had at a cheap rate; and peat, which we have before remarked, is similar in composition, is abundant and cheap in many situations.

These substances are the best the farmer can use in his yards or stables for the absorption of urine, and the liquids of the manure heap, or for preventing the escape of gases. They hold the fertilizing principles with sufficient tenacity to prevent their loss by evaporation, but yield them, under the action of heat and moisture, to the wants of growing plants.

Peat has, in some instances been charred, and in that form used as a manure with advantage. Further experiments are needed, however, to show its comparative effects in this form. It can be charred without any additional expense for fuel; the peat itself, being once ignited, will burn to any degree that is required. The peat should be first partially dried then a fire may be kindled, and the lumps of peat gradually placed round. When the fire is fairly started, it should be kept in a smothered state; because an open blazing fire will reduce the peat to ashes, without forming charcoal. Two hundred to three hundred bushels of charred peat per acre, have been found to produce effects equal to a copious dressing of animal manure. The acid of the peat is dissipated by this process,—it is reduced to a pulverised state, and benefits vegetation immediately.

Management of Grass Land.

The improvement of grass land, has not generally received that attention in this country, which the importance of this department of husbandry seems to demand. Throughout the northern states, the grass crop, in hay and pasturage, is of greater value than any other. With the exception of swine, grass constitutes the principal food of our domestic stock. It chiefly feeds our laboring animals, and is the "raw material" from which is produced most of our beef, mutton, butter, cheese and wool; and by thus supporting the live stock of our farms, furnishes in an essential degree, the elements for the production of our breadstuffs, fruits and vegetables.

In those parts of our country where dairying and stock raising constitute the leading branches of farming, it is important to continue the production of grass on the same land as long as good crops can be obtained. In many situations, the product may be kept up for many years, with no diminution, without breaking the sod with the plow. Such is particularly the case with lands which are annually flooded, and it is so to a greater or less extent, with all rich, moist lands. The first requisite is, that the ground be properly prepared and well seeded. If intended for mowing, the surface should be made smooth. Wet places, and those where the grass would be likely to "winter-kill," should be underdrained. For *permanent* meadows, it is not advisable to sow much red clover; it dies out and leaves vacancies in the sward, which afford beds for the growth of weeds. The best grasses for the purpose under consideration, are timothy, (herds-grass of New England,) and red-top, with a little white clover—unless there is plenty of the latter in the soil. The quantity of seed to the acre, if the land is moist, may be ten quarts timothy, one bushel red-top, and two quarts of white clover. The different seeds may be mixed and sown together, slightly brushing or harrowing them in.

The time of seeding may be varied, according to circumstances. If the ground is in good order, the grass may be sown in the spring with some kind of grain; if it is in a rough state, the seeding may be postponed till August or September, which will give the best of the season to work it and bring it into suitable condi.

tion. When the ground has become well swarded, the great object will be to keep it so. Attention should be given that it does not become so closely bound as to choke the growth of the grasses; and if spots die out, from any cause, they should be immediately re-seeded. A light sharp harrow, drawn over the field in spring, after the ground has settled, will prevent binding. If the grasses seem to be generally on the decline, it will be best to give the sward a thorough harrowing, immediately after mowing, and sow seed, more or less, according to the condition of the old grass, applying at the same time, a dressing of fine compost. Brush in the seed and mix it with the manure with a brush harrow, and pass a roller over it. Top-dressings of this kind will be useful, and should be applied whenever the crop begins to depreciate.

Another mode of renewing meadows has been considerably practiced in Massachusetts and other New England states, for the last twenty years, and is much approved where it is wished to keep the land constantly in grass, with no other crop intervening. The land is plowed soon after the hay is taken off, and immediately re-seeded. The furrows are turned *flat*, in order to keep the surface as level and smooth as possible. The furrows are first rolled and then harrowed with a very light harrow, so as not to disturb the inverted grass—the roller and harrow being passed lengthwise of the furrows, only. Manure, in such quantities as the farmer can spare, is spread on the ground at the time of sowing the seed. It is not considered expedient to plow very deep, for this purpose; the new grass forms a good sward sooner, where the furrow is not more than five or six inches, than where it is of a greater depth. No grain is sown with the grass seed. If the autumn is moist, the young grass will make sufficient growth to stand the winter, and will give a good crop the next season, though it will be later than ordinary grass.

Many farmers who have had experience in sowing grass seed at various seasons of the year, prefer the latter part of summer or the first of autumn. Grass sown in spring, with grain, is often overpowered and kept feeble. It is choked and deprived of moisture by the stronger growth of the grain; and if the weather is dry and hot at the time the grain is harvested, a large portion of the grass is sure to be killed, which leaves the ground to be occupied by weeds. On the other hand, late-sown grass escapes the drouth of the first season, and by having the benefit of the autumnal rains, becomes well set before winter shuts up the ground.

The time of mowing has much to do with the vigor of the sward and the amount of the crop. If the grass is suffered to run to seed, it exhausts the energy and life of the roots, much more than if it was cut at an earlier stage. The deterioration of the soil is also greater in all cases where plants are allowed to form seed. The question has been much discussed, whether mowing-grounds should be grazed by any kind of stock. The writer's observation leads to the belief that this depends much on the condition of the land and the kind of animals placed on it. Cattle and horses may do great injury to grass land, when it is wet or so soft that the sward is broken and the soil poached by the hoof. Sheep are less liable to do damage in this way; though they, as well as other stock, may be kept so close that they will gnaw the grass to the roots, rendering it liable to be killed by frost or drouth; but if the land is only moderately fed, while it is dry and comparatively solid, we do not think the crops of succeeding years are lessened in consequence.

But it is argued that the aftermath should be left on the ground as a manure. The question is, simply, whether this grass is worth more for the purpose of fattening animals, or making butter and cheese, &c., than it is for manure in its crude state; or whether it may not be better economy to use the grass for these purposes, and manure the land in some other way. The course of the farmer must be determined by the particular circumstances in which he is placed; such as the comparative value of the products named, and the facilities he has for manuring his land. An experiment, however, will convince him that a dressing of manure, though it be only slight, will produce striking effects compared with the decay of any common crop of aftermath.

Pastures.—In most sections, it is common for land to remain for many years in pasturage. In hilly and mountainous districts, particularly, there are lands that have been thus in grass ever since they were first cleared from the forest—a period extending in some instances in this country, to two hundred years, and in Europe, some lands have been in this situation from time immemorial. Under proper management, the herbage does not deteriorate either in quantity or quality. In this respect, grass seems to form an exception to most crops, which require to be managed on the principle of rotation.

In many situations, little or no attention is paid to the improvement of pastures; a fact which may well excite surprise when we consider the important relation they sustain in the general economy of the farm. We know of no reason why a judicious expenditure of money on this part of the farm, may not yield as profitable returns, as the same amount laid out on any other portion. The chief improvements required on pastures, are draining, the eradication of bushes and useless plants, and bringing the land into proper grasses. Drainage is, perhaps, generally most necessary. The watery and sour nature of herbage consequent on too much wetness of the soil, is not only unpalatable and innutritious, but absolutely unwholesome, tending to produce diseases of the liver both in cattle and sheep.

Drains may be made at any season of the year, (except when the ground is frozen,) as best suits the convenience of the farmer. Bushes can be destroyed most easily towards the latter part of summer. The "old of the moon in August," has long been considered the best season for performing this business. Without admitting any special lunar influence in the case, we believe experience has established the fact that bushes are more effectually killed when cut at this period, than at any other. Alders and other shrubs that grow on stools or hillocks, raised above the general surface, may be torn out by the roots and effectually exterminated. Two men, and two to four strong oxen, with a root-puller, (such as has been several times described in our columns,) will clear them out rapidly. Briars and small shrubs should be cut close to the ground, and if they sprout, the operation should be repeated the next season, which, if the work is well done, will be pretty sure to destroy them. Sheep and cattle will kill many of the young sprouts by cropping them. The bushes should be burned, if thick on the ground, the ground well harrowed, and grass seed sown.

If ground is intended for permanent pasture, we think it is not necessary, or advisable, to plow it. The condition of the soil when the forest is first cleared off, is favorable to the growth of grass. The vegetable matter on the surface can be sufficiently mixed with the soil with the harrow, and the grasses *take* more readily and are less liable to die out, than if the soil was reversed by the plow.

Grasses for Pastures.—If we examine the sward of our best pastures, we shall generally find it to consist of several kinds of grasses and plants. The advantage of this mixture is two-fold; the ground is made to support a greater crop of herbage, and the thrift of stock is generally promoted by it. Animals when left to themselves, choose plants of different kinds,

and we cannot doubt that nature prompts them to that course most conducive to their health.

It is a common remark with grazing farmers, and dairymen, that stock does best, and the best butter is made on the "natural grasses," meaning such plants as come into the soil without being sown. These are generally, the "June grass," or Kentucky blue grass, (*Poa pratensis,*) and white clover, (*Trifolium repens.*) Whether either of these is really indigenous to the country, we are unable to determine; but both are very *natural* to all our moist rich grounds. The first is one of the best pasture grasses we have, especially for rich soils. It starts early in spring, and grows late in the fall. It makes a mass of rich leaves, which being but little injured by frost, may lie on the ground through the winter, and afford good support for stock whenever there is no snow, and may even be fed off the next spring, before a new growth starts. It constitutes the principal herbage of most of our best pastures. The fame of the blue-grass pastures of Kentucky, is wide-spread, and they are formed chiefly of this species. But as, for the reason before given, it is desirable to have a mixtnre, and as the blue-grass does not make so much growth during the drouth of summer, it is well to have with it some timothy, (*Phleum pratense,*) red top, (*Agrostis vulgaris,*) and white clover. The timothy and red-top start later than the blue-grass, and do not stand the frost so well, but will make more growth in the middle of the season; and the white clover will fill up all the interstices, making a close sward. On deep loamy soils, orchard-grass, (*Dactylis glomerata,*) may be substituted for timothy and red-top. It is a strong-growing grass in such situations, and makes an abundance of leaves which are well relished by cattle and horses.

In forming pastures, the following kinds and quantities of seed may be used for an acre:

Kentucky blue-grass,.....	16	quarts.
Timothy,.....	4	do
Red-top,.....	8	do
White clover,.....	2	do

If orchard-grass is substituted for the timothy and red-top, half a bushel of seed will be required.

It should be an object to feed pastures as evenly as possible; the grass should not be allowed to run up to seed; as this is not only a loss of the grass, but weakens the roots and impairs the vigor of the succeeding growth, —exhausts the soil, and injures the quality of the feed for the next year. The "old fog," if allowed to remain on the ground, makes the grass start thin and spiry, makes it sour and unpalatable, so that stock reject it, unless impelled by hunger, and it forms a favorable bed for the seeds of wild plants, which soon spring up. If the farmer cannot so stock his fields as to prevent the grass from seeding, it is better to mow the spots which are not properly fed, in order to get the benefit of the fall feed; and if the "fog" is not got off in any other way, it is best to burn it in spring. It is a maxim with the best graziers, in England and this country, that the pastures should be well cleared off once a year, in order to prevent the accumulation of old growth.

These remarks apply more particularly to those kinds of grass which form large and strong seed stems, as timothy or red-top. Blue-grass has but a small and feeble stem, but forms more leaf. If grass is wanted for winter use, it should be the growth of the latter part of the season, which makes no seed stems.

The improvement of pastures by manure is often inconvenient; they are frequently at a distance from the body of the farm, and in situations difficult of access. It is therefore expensive, and perhaps impracticable to carry manure to them from the barn-yard. Hence, we must resort to concentrated and portable manures; as plaster, ashes, bones, guano, &c. Cattle and other stock are very likely to leave a large portion of their manure where it does comparatively but little good—in woods or groves, or under fences. This manure might be easily saved and turned to good account. Yards might be made in some convenient part of the pasture, (with cheap sheds if desired,) and a layer of leaves, rubbish from the pastures, or muck, to absorb the urine, and prevent the loss of liquids. The stock might, without much trouble, be kept in these yards, nights; and a large quantity of manure in this way accumulated, which would be of great service if properly spread over those portions of the ground where most needed, or where it would do most good. It should be made fine and evenly spread, and bushed or harrowed in.

Wood's Improvement of the Plow.

The following communication, from the daughters of the late JETHRO WOOD, we think cannot fail to prove interesting, as connected with the history of the plow. They have placed before us a large amount of documentary matter, in corroboration of their statements, from an examination of which we may safely say, that "the half is not told" in their communication. The extraordinary perseverance of JETHRO WOOD, was only equalled by the remarkable combination of difficulties he met with—nearly his whole life was spent in labors which resulted in eminent benefit to his country, but which left his family nearly destitute—and, to make an appropriation for his children, now consisting of four daughters, we are satisfied would be but an act of justice on the part of Congress:

The attention which has lately been excited in relation to the history of the improvement of the plow, and the extraordinary and almost unaccountable misinformation which has been spread through papers over the whole country, seems to render it necessary to make a short statement of the facts of the case, all of which can be substantiated by full and authentic evidence.

The late Jethro Wood commenced his experiments for the improvement of the plow, in the early part of the year 1812. Previous to that time, James Small, of Scotland, Robert Ransom of England, and Charles Newbold of New Jersey, had made improvements; after which David Peacock, of New Jersey, in 1814, paid Newbold $1000 for the privilege of using his patent;* (Newbold's plow was never brought into practical use,) and after improvements, obtained a patent himself, known as Peacock's plow: it had a wrought iron share and steel edge. None of these plows were generally adopted by the farmers. According to Judge Leland, of Auburn, (a gentleman intimately connected with the history of the plow,) Peacock's plow cost from $20 to $25, and Small's plow was recommended about or a little before Jethro Wood obtained his patent of 1819, on account of its *cheapness*, being only $22.

Jethro Wood obtained his first patent in 1814, but the invention was a very imperfect one, and was in a few years wholly thrown aside. After five years' labor, he perfected his second patent in 1819, which was his great achievement. The imperfect patent of 1814 has been confounded with the latter by some writers, and its imperfections exhibited as a proof that his invention was destitute of merit, and thus a most unjust and wholly erroneous impression, made by substituting a crude for a finished work.

The difficulties and labors Jethro Wood encountered in perfecting and introducing his plow, were almost incredible. At first, the nearest furnace was in Onondaga county, 40 miles distant; it often happened, when arriving there, that it was not in blast; and sometimes several journeys were necessary to accomplish a single

* According to the statement of A. B. Allen, of New-York.

point. According to a statement of Joseph Ridgway, (late Representative in Congress from Ohio,) who aided him at the time, "The cost of the first patterns may be put down at $15,000; the cost of these patterns, however was but an item compared with the expenditures he incurred during the five years he was experimenting, and before he was prepared for combining his piecemeal inventions in the form of patterns, for the plow he got patented. A set of Jethro Wood's plow patterns taken from a set of standard patterns, when dressed up and polished, with their appendages, to cast plows from, may be stated to cost from four to seven hundred dollars, the cost varying according to the completeness of the fixtures for casting from."

These patterns, in consequence of the prejudice against cast iron or "pot metal," as it was then called, which was considered about as brittle as glass, Jethro Wood was obliged to furnish at his own personal expense to a vast number of foundries and furnaces; and a constant perseverance and travelling was needed to introduce the plow. The unskillfulness of the workmen in those early days was so great, that in many instances, he had to show them by moulding the castings with his own hands; and the prejudices against "pot-metal" were so strong, he was often obliged to give presents to induce them to cast the plow; so that at the expiration of his patent, all his receipts did not nearly equal his expenses, to say nothing of his time and labor. He commenced in comfortable circumstances, out of debt, and ended deeply involved.

But there was another obstacle of a most formidable nature, which rendered his long and laborious efforts a continued series of great difficulties and disappointments, —*a deficiency in the former patent laws.* As soon as by his unwearied labors, the plow had been introduced, infringements commenced; and manufacturers whom he had supplied with patterns, refused to pay premium, and Jethro Wood by resorting to courts of law, could only look forward to defeat, and ruinous bills of costs. The only course left for him, was to strengthen himself by interesting men in his patent; therefore he was obliged to make large assignments of territory, without receiving any pecuniary reward, and without realising any of the benefits he had hoped to receive. Thus the fourteen years of his term was lost to him, while his country reaped the benefits.

In 1832, it was satisfactorily shown to Congress that he had not been remunerated for the benefits conferred on agriculture, by the invention and introduction of his cast iron plow, and the patent was renewed for a term of fourteen years. But a proviso was insidiously inserted in the bill, conferring on the former assignees all the right and privileges they had acquired during the first term of the patent. This proviso almost destroyed the benefits of the extension to the inventor, or his children. by giving to the assignees the largest and best portions of the territory, who had never done anything to merit the consideration of Congress, or for the advantage of the inventor, (with but two honorable exceptions,) but who had made themselves rich by the manufacture and sale of plows. The year following the extension, Jethro Wood breathed his last. The first object of his son Benjamin, (his executor,) was to apply to Congress for an amendment of the patent laws, and several years were consumed before this was accomplished. The second was to commence suits to sustain the validity of the patent. So long as Jethro Wood encountered the general prejudice against his plow, the merit, (or odium as it was then regarded) was fully accredited to him. It was only since its extraordinary value was proved that attempts were made to deprive him of the credit. In consequence of the length of time, witnesses were very much scattered, and pecuniary means being wholly inadequate, the proper witnesses could not be obtained, and from combinations of wealth and numbers, against a single family, the executors suffered several defeats before the patent was sustained. But in the autumn of 1845, after a thorough investigation of all the facts in the case, the United States Circuit Court fully sustained all the points of Jethro Wood's patent, which decision was not made until within a few months of the expiration of the patent, and a short period before the death of the executor.

It is a common but most erroneous opinion, that although Jethro Wood himself reaped no advantage, his heirs have received enormous sums. To disprove this, it is sufficient to state, that it is a well-known fact, that before the final decision of the Court, premiums could not be collected, and the sums received by the administratrices for the brief period of the patent remaining, over and above the expenses of the suits, did not exceed the *small sum of five hundred and forty dollars.* This fact is established by Samuel Stevens, Esq., of Albany, and Judge Leland of Auburn, Cayuga county, as to the cost of the suits; and the affidavit of the administratrices as regards the whole amount of money received by them.

The limits of this article have prevented that appeal to authority which would have corroborated all its statements; documentary evidence could be furnished on all the points. But the following brief testimony from a a few persons of high standing in the community, may not be out of place.

Wm. H. Seward, (now United States Senator,) says under date of Nov. 20, 1848, "I am fully satisfied that no citizen of the United States has conferred greater economical benefit on his country than Jethro Wood, —none of her benefactors have been more inadequately rewarded."

David Thomas, for many years chief engineer on the New-York canals, and who was personally acquainted with the efforts of Jethro Wood, from the commencement to the close of his life, furnishes the following testimony: "The exercise of mind and amount of labor to perfect these improvements, can scarcely be appreciated by those who have not been engaged in similar pursuits. It was a new field, and everything had to be learned by experiments. To discover and procure the best material for patterns, and to prepare them, employed him a long time, and a common mind would have shrunk from the difficulties that met him at foundries; oftentimes he had to overcome the unskillfulness or prejudice of moulders, by presents, or by showing them how to manage, with his own hands.

"I am satisfied that all his patented improvements were inventions of his own, originating in his own mind, and to avoid encroaching on what others had invented, he had every volume within his reach that treated of plows, including several Encyclopædias, carefully examined for that purpose.

"To Jethro Wood's name, belongs the honor of rendering the plow that cheap and efficient instrument that we now find it, truly enabling us to cultivate our fields at less than one-fourth of the former expense, and saving millions to the country."

Samuel Stevens, of Albany, says under date of Jan. 8, 1848, "I am satisfied that neither he nor his children have realised anything from that patent; so far as my humble opinion can have any weight, I think there never was a case in which the children of a public benefactor have such strong claims to be secured by the prolongation of a patent, or to receive some remuneration for the mental labor of their ancestor."

John Porter of Auburn, formerly New-York Senator, says, "I have resided and been in active business in Auburn, the principal town in the county of Cayuga, [the residence of Jethro Wood,] for the last thirty years, and have known him and something about his

plow business for many years. It is my opinion, made up from observation of his pecuniary affairs, which were pretty well understood by all his acquaintances in this region, that his receipts from his patent-right were at all times small, and altogether disproportioned to the value of his inventions. And I think this opinion prevails generally, among his acquaintances in this country."

Judge Leland, of Auburn, long acquainted with the labors of Jethro Wood, and thoroughly versed in a knowledge of the different improvements of the plow, gives the following statement in reference to those improvements:

"Wood's plow of 1819, is yet equal if not superior to them all—all that was required, was to take his suggestions in his specification, to make the plow longer or shorter, to suit the earth they were to be used in. When his plow was first put into use, the country was new, and full of what was called cradle-knolls, and required a short plow. As the country became more smooth, the plow should be lengthened. This he suggested, and this is all the best improvers have ever done, such as Delano, the Livingston county, and the Genesee county plows, so called."

In addition to the above, Joseph Ridgway, lately a Representative in Congress from Ohio, and long engaged in the manufacture of plows, states that he has all the varieties of plow patterns, and that during the sale of forty-two thousand plows, he sold forty thousand of the patent of Jethro Wood, and but two thousand of the other kinds.

PHOEBE WOOD,
SYLVIA ANN WOOD,
Administratrices of Jethro Wood.

Study of the Natural Sciences.

EDS. CULTIVATOR—I was highly gratified with Mr. Buckley's article on the study of the Natural Sciences, in your February number, and hope it will have the salutary effect on your readers which its merits demand. Premising that such will be the fact, we may well anticipate a happy and brilliant change; one of incalculable benefit in the progress of the arts, and of soothing influence on the character of mind, as about to burst forth and flow, like pure and healthful waters, over the land.

To no class of men do these studies present themselves with richer promise of reward, than to the farmer. All his labors are in the great workshop of nature, and all his success depends on his moving in cooperation with her secret workings. She humbles herself, and her firmest rocks waste away to aid him in his designs. The clouds spread over the earth, and drop fatness, to increase his riches. The thunder roars and the lightnings play, to give purity to the atmosphere whose healthfulness is his strength. Even winter, with her howling winds and rugged storms, is to him a visitation of mercy, a messenger of love sent to subdue by frost his unyielding soil, and give repose to vegetable nature, which causes it to bloom with richer beauty and in firmer strength in the bright morning of spring. All nature, from the rolling sun with its planetary escort, to the crawling insect so small as to defy the searching of his vision, and so frail that a breath may destroy it, are his, and operate for weal or woe, in aiding him in his designs.

How wide a field is thus opened for his investigation, and what a variety of objects are brought to make demands on his research? Meteorology, Geology, Mineralogy, Botany, Zoology and Entomology, all have their daily and hourly bearing on his labors. A knowledge of them *all*, is therefore desirable. But the question will arise, how are farmers, secluded as they are from the sanctums of science, to make progress in these investigations? Our reply is, set yourselves about it; find out what you can by observation, and the various publications on each particular science, which in these days are so cheap as to be brought within the reach of all, and so familiarly written that any one of ordinary capacity and common school education can readily comprehend. Getting knowledge is like getting wealth. If the mind is intent upon the object, the labor will be directed towards it, and the end will be attained. And how much more lasting is intellectual wealth than that which is measured by dollars and cents. No fluctuations of the times can depreciate its value. The floods cannot drown, nor the flames consume it.

To the young, these sciences present themselves with peculiar interest. *The young are, by nature, naturalists.* Whoever saw an infant that was not pleased with a flower, a pebble, a shell or an animal. See with what energy it will divest the one of its leaves, as if analyses were already commenced, and with what fondness another is caressed. These principles of nature, if cultivated, would lead to results salutary and honorable; a kind look, an approving word—a whisper from the parent when the mind of the child is entertained by these things, might lay the foundation, if not for a Newton or a Franklin, of a being, wise, useful and happy. Merely allow and encourage them, and their go-aheadativeness will enable them to make rich progress.

But if parents are unwilling to *stoop so low* as to converse with and instruct their children from the book of nature and of wisdom, which no mortal mind has yet been able to comprehend, we will suggest the propriety of introducing the studies drawn from it into our common schools, where every child in the land may have an opportunity, without much trouble or loss of time from other studies, to become acquainted with its valuable contents. A half an hour, or even less time, devoted by the teacher, each day, in talking upon these subjects, will effect much more, than in the outset will be supposed.

Our own experience in this matter is the best testimony we can bring in favor of its truthfulness. In our teaching days we were at one time connected with one of the oldest and best established academies in Massachusetts. When we entered upon our service, there was not a mineral to be found on all the premises, unless it were such as nature planted there, or art had introduced to give firmness and security to the ample dimensions of the building. We had not passed a week within those time-honored walls, before we suggested to some of our scholars the utility of geology and mineralogy, as studies worthy of their notice as matter of pastime if nothing more, and before that week was ended, shelves were prepared and some two or three specimens placed upon them, as the corner stones of a future cabinet. The idea once started, spread with desirable rapidity. The members of the school, instead of spending the hours of recess in indolence, or useless amusement, were awake by times, and abroad in the fields snuffing the pure air, and exercising their muscles to sever a fragment from some hitherto unnoticed rock, to search out its peculiarities, and swell an accumulating list of specimens. All, both male and female scholars, were interested in the new study which permitted them to roam over the fields and seek new objects of observation. Nor were these operations limited to the school. Others became interested, and little children often came to present their minerals, and ask what they were, and what they were good for. The same interest was kept up for years, and for aught we know, until the present time; and when we last visited the cabinet, it presented a rich collection from various sections of the globe.

That the same happy effects will result from like causes in all academies and high schools in our country,

there can be no doubt. Let cabinets at once be established, and they will go on to final success. Every new class seeing what has been done by their predecessors, will be anxious to do their part, and coming, as they usually do, from different localities, each can, without difficulty, bring different and various specimens.

But for the *common school*, the academy of the million, the place where probably three-fourths, at least, of all the farmers of the next half century, are to spend their scholastic days;—the seminary, which should be so elevated in its character, that all can be qualified for the most honorable and useful stations in life within its walls; for these institutions we plead, and to them we would commend these sciences as of salutary and practical importance. We are aware that the plea will be urged that we have already too many studies in our common schools; and to this we say, if you have, exclude some of less importance, and introduce those whose practical benefit in the every day affairs of life, has been too long overlooked. The knowledge which is the the most intimately connected with the every day concerns of life, is the first knowledge we should strive to attain, and our every day communings with nature, show that she possesses this knowledge.

Another very plausible excuse is, that children at the age of those attending these schools, are too young to put upon these studies. This is the result of ignorance or prejudice in the matter. They are the very first things, as we have before said, that a child would learn if left to his own inclination.

But we have a course to present which will obviate both the foregoing difficulties, if they can in any way be considered as such. Let the teacher say to his scholars as the spring opens, on such a day, my dear scholars, if the weather permit, I propose that we all amuse ourselves by a ramble in the woods, to witness the beauty that spring is scattering over the lap of nature; I am sure it will be what you will all enjoy, and I hope by your diligence in study, you will all be prepared for the pleasant recreation. And when the time comes, and he goes forth with his happy laughing throng, let him call their attention to the shape of a leaf, the varied colors of a flower, or the qualities of a rock; any one or all of them, as circumstances will permit. Observation will thus be awakened, which will require but little effort to increase. Then let him spend a short time, if no more than five minutes each day, in familiar remarks on some topic of natural science, and we will vouch for it, he will soon find subjects enough, and before his term expires, he will see his scholars not only awake in the matter of investigating these things, but possessing an amount of knowledge honorable to those of greater age. We submit it to you, teachers, to try the experiment, and give us a fair result. Wm. Bacon. *Elmwood, March*, 1849.

The Season in Virginia.—Mr. Wm. Shultice, of Matthews Court-House, Va., writes,—"We had a very severe frost here in April, which destroyed the forward wheat in some places and very seriously injured it in others. Many who had planted corn were compelled to plow the ground again and replant. The early fruits, as peaches, cherries, &c., were totally cut off, except in some favorable locations."

Preservation of Vegetables.—Mr. Hamilton Perry, of Lansingburgh, informs us that he has succeeded in keeping beets through the winter by the following mode:—He packs the roots in barrels or casks, with earth in which ashes, at the rate of about a peck to a bushel of earth had been mixed. The roots being placed in layers, and each layer covered with the compost. He states that he has kept them sound in this way three years.

Comparative Profits of Free and Slave Labor.

The following communication, in answer to the inquiries of "A Southerner," in our May number, is from the pen of a distinguished farmer, who is thoroughly conversant with the subject on which he speaks. In his description of events that have transpired within his own observation, he has been governed by the same spirit of candor which was evinced by the inquiry of our southern friend; by whom, as well as by many others, his remarks will be read with interest.—Eds.

Editors of the Cultivator—In your May number page 156, a correspondent signing himself A Southerner, and hailing from Barboursville, Va., asks for information through your paper, upon the subject of the profits of Free as compared with Slave Labor. The information is asked in so frank and proper a manner, with so natural a desire to come to a correct conclusion, that no intelligent northern man, who is a friend to free labor, from honest convictions of its decided superiority over slave labor, as best promoting individual and national prosperity, and who can base his reasoning upon his own personal observation and experience, should hesitate to comply with so reasonable a request.

The comparative prosperity of the North over the South, has been attributed in a great measure, to the superior cheapness of free, over slave labor. Here, is a southern individual, himself a slave-holder, and who acknowledges its unprofitableness, but modestly and properly asks the north—"If you are so much better off than we are, tell us why you are so?" If northern men do not respond to these interrogatories, fairly and fully, let them cease their clamor about free labor, and when, hereafter, they speak in derogation of slavery, they must base their plea upon some other ground than upon its unprofitableness.

Whether I shall meet the question fully and satisfactorily, remains to be seen; but I will not hesitate to premise, that I have very decided convictions in favor of free labor. It may be as well to say that I am a farmer, not from necessity, but from the opinion I have formed of its excellence as a pursuit; and having now followed it for many years, have a growing desire to continue it; because it contributes to my health and happiness, and it is an employment of which I never tire. I take the more pleasure, therefore, in imparting any little information I possess, for the benefit of those who ask it. I have lived long enough to draw practical information from the pursuit of husbandry, as it was practiced in the State of New-York, when we cultivated our farms with slaves; and it being now near thirty years since the emancipation of the blacks in this State took place, we have had an abundance of time to form an opinion upon the relative profits of these two kinds of labor.

It is useless to speculate upon this subject—experience is better than abstract reasoning, when that reasoning is based only upon specious hypothesis. When I therefore, take a retrospective view of the agriculture of the county in which I reside, say from 1805 to 1825, (the last about the time our emancipation bill passed, and which was to go in part into gradual operation,) a county which has no superior advantages of fertility of soil over many other counties in the State, and for which review I had great advantages by frequently traveling over it,—and contrast the appearance of its cultivated farms then and now, I think I can give a ready answer to this knotty question.

Then, the negroes did nearly all the work that was done. The white man, if possessed of any property, spent his time, not on his farm, but on the road and in the tavern, at the horse-race, or where pleasure or amusement called him. For the son of a man of property to labor, except very slightly, was derogatory to his cha-

racter; and an opinion was very generally entertained, that there was no necessity, much less propriety, for a young man to labor. But how was their time to be spent? To do *something*, is natural to our wishes and habits, and if we are not engaged in something useful, we can hardly be kept out of mischief. It was not the fashion then to give, except to a favorite son, a finished education; but as the majority would not stay at home, where they did nothing, they sought after some employment to spend their time, which employment would naturally be found where others, like themselves, congregated; and that was in public places, and in public or private amusements. In this, they only followed the example of their fathers, who in most instances, after a slight morning survey of the farm would be found either at the country store, or at the tavern. These certainly, could not be the places where an agricultural community could better its condition; where having fled from the labor or hasty direction bestowed upon the farm, they were strongly tempted either to unnecessarily spend the avails of its produets, or to form habits of the grossest dissipation. Hunting and fishing were harmless occupations, compared to those taught in these unfortunate gatherings; and how many fine estates have I seen spent, and their owners, and the natural heirs of them, beggared by the indulgence in these idle and vicious habits, practiced by nearly a whole community! In my mind's eye, I can now run over a long catalogue of persons, who at that time were some of our most promising young men, who have fallen victims to those habits of the times, and the estates which they ought to have inherited, passed into the possession of others.

These were the times when the blacks only labored. The white man considered himself above labor. The earnings of the slave, therefore, while they contributed to his support, likewise did their share of his ruin. True, in comparison to population, we had not as many slaves as they have at the south; but we had enough to till our land as it was then tilled, and thus take from us a useful and necessary personal occupation. The labor done by the slaves, had to support the white man and his family, who were only consumers, besides supporting the slave and his family. Here were useless mouths to feed, useless backs to clothe—and successful indeed was that farmer, who under this management, could at the end of the year, make both ends meet. When I recall to mind the imperfect method of cultivation practiced at that time—the want of comforts for the use of man—of care for his stock—the appearance of his farm, fences and outbuildings—the quantity of land lying waste—the imperfect formation of roads and bridges—the want of school-houses for the education of children—of churches to collect the population on the sabbath—and the general lack of prosperity pervading almost all classes, I but recal what I have too often witnessed, and the recollection is too vivid to be soon effaced from my memory.

The morals of the community corresponded to these outward appearances. It was then the custom for the men, both old and young, of a neighborhood, by 11 o'clock in the morning, to collect at the nearest public houses—of which in many townships there were scores—remain drinking and talking over the news until high noon—leave for their dinners, and by 5 P. M. to re-collect to indulge more freely in drinking or gambling; and to while away the time, possibly at a cock-fight, or horse-race, or have a fight among themselves. About 12 o'clock at night they retired to their respective homes to re-enact the same or similar scenes the next day. These were events of almost daily occurrence. Idleness was the parent of immorality, and that in turn brought about the ruin of tens of thousands of families.

When we had arrived at about the acme of this state of society, emancipation of the colored race was called for. At first, much objection was made to it by most of the owners of slaves. The cry was—"we shall be ruined. Who is to work our estates? The community will suffer for the want of laboring men, and we all will be impoverished together." But the good sense and patriotism of the freemen of our State, prevailed over all the objections urged; and depend upon it they were not lightly pressed by able advocates; and our bill of emancipation, after a long and severe struggle, at length became the law of the State. I am not aware that much difficulty, for any length of time, was created by this change in the manner of working our estates. Blacks that were liberated, were hired in many instances, and in a short time a white population came forward, and all the labors of the farm went on with more than the accustomed energy. The sons of the farmer, instead of spending their time in idleness and dissipation, from necessity, as it were, became producers instead of consumers. All the industry of the community was called into requisition. It became *popular* for all to labor in their several vocations, according to their respective abilities, and after the lapse of about twenty-five years, an entire change has been wrought in the whole state of society.

As to laborers, the vacuum thus temporarily created was more than made up by white men, and the effect produced by the change, has been productive of the most wonderful and propitious results. The whole face of nature is changed, and all around gives evidence that a great work has been slowly, silently and happily accomplished. The uncomfortable old houses of the farmers have given way to new and more commodious ones. The outbuildings are enlarged, improved, and made ornamental to the establishment. Fences in most instances, are made that will secure the growing crops; waste land improved and brought into successful cultivation; the stock changed into objects of beauty as well as profit; the roads, bridges, school-houses and churches, such as do credit to an industrious, intelligent, thriving moral and religious people. These are the fruits of free labor, calling upon every man to act well his part in society; and the bounties of Providence that have followed, are the strong evidences of what well directed industry will accomplish.

That the benefits flowing from this state of society have been fully realised, as far as pecuniary profit is concerned, I will here give by way of illustration, conclusive proof. In the town in which I reside, the soil of which is easily worked but not naturally very fertile, I well remember the time when few men had money to loan, and but little of it could be procured. Were it necessary, I would now name the individuals, but that is not required. How is it now? In a rural population of about 4,000 in the town, and for about four miles each way around me, I know that, independent of real estate, they have at least a million of dollars on loan, and this in most instances belonging to farmers. I will give one more illustration to show that on this point I cannot be mistaken. Within my time, and that has not been very lengthened, lived a farmer near me, who had about 700 acres of our best land, and a personal estate of about six or seven thousand dollars, obtained by inheritance. He cultivated his land with seven or eight negroes, and had a corresponding number of females and children. The owner of these was sober, intelligent and careful, so far as he thought was then required. He had a family of sons and daughters. He died in 1815. His personal estate was spent. His real estate was divided among his children. To one son he gave his homestead, and about 160 acres of land. This son discarded the slaves after a short trial—hired his labor done, and although not more economical nor attentive to his business than his father was

nor better qualified to carry it on, yet he has added to his estate, and made it more than double in size: and although he has had a larger family to support and educate, he has done it much more thoroughly, and is a man of wealth, independent of the value of his farm. But this is only one instance out of a thousand. It is the application of the theory, that free labor is much more profitable than slave labor. And why should it not be so? Will not two free men do the work of three or four dandling slaves? The one you can discharge if he is indolent; the other you are obliged to maintain, whether industrious or indolent. The one knows that his bread is the fruit of his industry; the other is like the ox who must be constantly goaded to perform his task. The one is economical from necessity; the other looks to his master to supply his every want, both in health and sickness. His family is often more numerous than that of his master, and his imperfect and unprofitable labor is the only restitution he makes. If improvement is necessary in the cultivation of the estate, is he the man to carry it out? If economy is to be practiced in the several departments of farm-labor, is he the man to make that economy effective to the owner? What stimulus has he to urge him on to labor, other than the voice of his overseer? Or why should he practice self-denial? Can such a man fulfil the duties and meet the responsibilities that are required for the improvement of our society, and the amelioration of our condition? Certainly not. One day is to him as another, and the sluggish accomplishment of his daily task, is all that he looks to.

Agriculture is an art that is in its nature progressive. A virgin soil at first, yields bountifully to its cultivator; but like our bodies, if overtasked, without a proper supply of aliment, it soon loses its productiveness; and it requires the exercise of mind as well as the labor of the hands to repay us for its cultivation. And are slaves the persons who can compete with the energy and intelligence of the freeman, so as to make his labor profitable to his owner? The farmers of the State of New-York, for the last ten or fifteen years have made great advances on the method of cultivating their farms. Hence the establishment of state and county agricultural societies, which are only aids in the work of improvement; and they now think of the establishment of a school of agriculture, both theoretic and exrimental, to advance it as a science as well as to make it practical as an art. Are slaves to be taught in these schools, or can they receive any benefit from these establishments? for, to my apprehension they will become most essential aids towards the renovation of the soil in the older states of the Union, where by overcropping they have exhausted their fertility.

But as enough has been said on these subjects, we will now proceed to answer some of the questions of "A Southerner." After stating the number of acres of his farm. (1200) and its proportions of arable, meadow land, &c., he asks—"How can I obtain the labor to keep up about 15 miles of fencing, and to cultivate my farm to advantage?" I answer, that doing the work well, does not require so much fence to be made every year, and that eight good laborers are all-sufficient for his purpose, except a small additional number in harvest-time. I speak from experience. I think I make as much fence as the inquirer, (but not annually,) as I farm about 1,000 acres; and were I as efficient as some of my neighbors, I have no doubt the income from my land would be materially increased; but I have no reason to complain. A northern farmer with that quantity of land, would think he did very poorly if he did not lay up from $2,500 to $5,000 per annum, after all his expenses were paid, besides enjoying the first fruits of his products. But to do this, he would no more think of feeding 60 or 70 persons, than of supporting all the paupers of a parish almshouse. How can a farmer secure anything over for himself, in the way of profits, if so large a number, mostly of helpless persons, are first to be fed, clothed, and supplied, as well in sickness as in health? The result is impracticable, and the master and mistress are the slaves, not those who receive bread from their hands. With the principle of free labor, the people of the north, having tried both kinds, are satisfied which is the cheapest and best, in every sense of the word. Experience has stamped a conviction on their minds that slave labor, for economy, freedom from care, careful cultivation, the advancement of society, both in promoting education, morality, and the prosperity of a people, will bear no comparison with the benefits that result from free labor; and they would no more think of going back to the old system of slave labor, than the freemen of the American Republic would think of going back to the establishment of a monarchial government. The other inquiries, as they are made to obtain information, would naturally be answered by employing competent northern men to take the direction of affairs, and to be left to the manner of farming with which they were accustomed. Changes could only slowly be made, and ought to be conducted with prudence and good judgment, to lead to beneficial results. NORTHERNER. *State of New-York, May* 15, 1849.

Agriculture of Seneca County, N. Y.

The report of the Seneca Co. Ag. Society, for the year 1848, prepared by its President, JOHN DELAFIELD, Esq., contains many valuable statistical facts in regard to the resources, improvements, and productions of the county. The report embraces in a tabular form, returns from the several towns in the county. The writer of the report observes that the returns may not be entirely correct, but that "they must be received as the nearest approach to truth, until the Legislature shall adopt the easy and more accurate method of annual returns from the whole State, through the instrumentality of the town assessors."

The staple product of the county is *wheat*, the average yield of which is stated at twenty bushels per acre. The variety called the "Hutchinson wheat" has heretofore been preferred, but the "Soule's" variety is increasing. *Indian corn* has not been much raised, till of late years, the demand for exportation has given quite a stimulus to its culture. The average yield is thirty-two bushels per acre; but many farmers produce sixty to eighty bushels per acre. *Barley* has latterly deteriorated in the county, generally, the yield for 1848 not being over twenty bushels per acre. *Rye* is only cultivated on the lighter soils of the county, which are not so favorable for wheat—average yield twelve to fourteen bushels per acre. *Oats* are quite extensively raised, yielding about forty bushels per acre on the average. *Buckwheat* is raised to a moderate extent, both for the grain and for plowing in as a manure. The *potato* crop has suffered much from the "rot." *Flax* has formerly been cultivated largely for its seed, but has been given up on account of its exhaustion of the soil. The culture of *fruits*, especially apples and pears, is receiving much attention. The county has for some years been celebrated for its apples, which have sold readily at twenty-five cents per bushel. Plum trees have been injured by the "black knot."

The *dairy* only receives the attention necessary for supplying the inhabitants with milk and butter. *Cattle* are said to be generally good. Crosses of the Short-horn, and also of the Devon breed, with the common stock, generally produce good milkers. Much attention is said to be given to rearing horses, which yearly improve in quality. *Sheep* are mostly of the Merino

Estimate of the Principal Products of Seneca County for 1848.

WHEAT.

TOWNS.	Acres cultivated.	Quantity of seed per acre.	Time of sowing or planting.	Quantity raised per acre.	Cost per acre.	Whole quantity in 1848.	Whole cost of the crop	Value at the market rates	Profit.	Profit per acre.	Profit per bushel.
		Bushels.		Bushels.		Bushels.		At $1.10			Cents.
Covert,	4,000	2	Sept 5 to 25	19	$9 00	76,000	$36,000	$83,600	$47,600	$11 90	62
Fayette,	7,200	1½ 2	10 " 25	20	10 00	144,000	72,000	158,400	86,400	12 00	60
Junius,	2,800	2	5 " 25	20	5 00	56,000	14,000	61,600	47,600	17 00	85
Lodi,	4,320	1½	5 " 20	19	9 00	82,080	38,880	90,288	51,408	11 90	62
Ovid,	3,500	1½	5 " 20	25	10 00	87,500	35,000	96,250	61,250	17 50	70
Romulus,	3,500	2	5 " 25	13	10 00	45,500	35,000	50,050	15,050	4 30	30
Seneca Falls,	2,500	2	5 " 25	20	10 00	50,000	25,000	55,000	30,000	12 00	60
Tyre,	1,980	1½	10	16	4 00	31,680	7,920	34,848	26,928	13 59	85
Varick,	3,300	2	5 " 20	14	10 00	46,200	33,000	50,820	17,820	5 40	38
Waterloo,	2,000	2	5 " 25	13	9 00	26,000	18,000	28,600	10,600	5 30	4
	35,100					644,960	$314,800	$709.456	$394,656		

BARLEY.

Covert,	250	2	May.	20	4 00	5,000	$1,000	$2,500*	$1,500	$6 00	30
Fayette,	1,100	2	1 " 10	20	6 00	22,000	6,600	11,000	4,400	4 45	20
Junius,	700	2½	1 " 10	25	3 00	17,500	2,110	8,750	6,650	9 50	38
Lodi,	576	2	April 20	25	3 50	14,400	2,016	7,200	5,184	9 00	36
Ovid,	80	2	May 1 " 10	25	6 00	2,000	480	1,000	520	6 50	26
Romulus	575	2½	1 " 10	25	6 00	14,375	3,450	7,187	3,737	6 50	26
Seneca Falls,	700	2½	1 " 10	25	6 00	17,500	4,200	8,750	4,550	6 50	26
Tyre,	990	2½	1 " 10	18	2 50	17,820	2,475	8,910	6,435	6 50	36
Varick,	400	2½	1 " 10	19	6 00	7,600	2,400	3,800	1,400	3 50	18
Waterloo,	400	2 to 3	1 " 10	15	5 00	6,000	2,000	3,000	1,000	2 50	16
	5,771					124,195	$26,721	$62,097	$35,376		

OATS.

Covert,	1,000	2	May 1 " 10	45	$4 00	45,000	$4,000	11,250†	7,250	$7 25	16
Fayette,	2,000	3	1 " 10	35	5 00	70,000	10,000	17,500	7,500	3 75	10
Junius,	800	3½	1 " 10	45	2 50	36,000	2,000	9,000	7,000	8 75	19
Lodi,	998	2	April 20	50	3 50	49,900	3,493	12,475	8,982	9 00	18
Ovid,	1,000	2½	May 1 " 10	45	6 00	45,000	6,000	11,250	5,250	5 25	11
Romulus	1,250	2½	1 " 10	37	6 00	46,250	7,500	11,562	4,062	3 25	8
Seneca Falls,	800	2½	1 " 10	38	6 00	30,400	4,800	7,600	2,800	3 50	9
Tyre,	1,188	3	1 " 10	25	2 50	29,700	2,970	7,425	4,455	3 75	15
Varick,	1,000	2½	1 " 10	37	6 00	37,000	6,000	9,250	3,250	3 25	8
Waterloo,	700	3	1 " 10	32	4 00	22,400	2,800	5,600	2,800	4 00	12
	10 736					411,650	$49,563	102,912	$53,349		

INDIAN CORN.

Covert,	1,100	⅓	M'y10 " 30	30	$8 00	33,000	8,800	$14,850‡	6,050	5 50	18
Fayette,	3,600	⅓	1 " 8	30	7 00	90,000	21,000	40,500	19,500	6 50	21
Junius,	1,000	⅓	10 " 20	45	5 00	45,000	5,000	20,250	15,250	15 25	31
Lodi,	1,122	⅓	10 " 30	30	9 00	33,660	10,098	15,147	5,049	4 50	15
Ovid,	1,100	⅓	10 " 30	38	7 00	41,800	7,700	18,810	11,110	11 00	26
Romulus,	1,000	⅓	10 " 30	35	8 00	35,000	8,000	15,750	7,750	7 75	22
Seneca Falls,	750	⅓	10 " 25	28	8 00	21,000	6,000	9,450	3,450	4 60	16
Tyre,	1,584	⅓	10 " 15	30	6 00	47,520	9,504	21,384	11,880	7 50	25
Varick,	1,000	⅓	10 " 25	25	8 00	27,500	8,800	12,375	3,575	3 25	12
Waterloo,	1,000	⅓	10 " 30	35	7 00	35,000	7,000	15,750	8,750	8 75	25
	12,756					409,480	$91.902	184,266	$92,364		

* At 50 cents per bushel.—† At 25 cents.—‡ At 45 cents.

breed. Their fleeces average three and a-half pounds each. *Swine* are only kept to consume the offals of the farm. Crosses of the Berkshire, Chinese and Byfield prevail.

The introduction of *improved implements of husbandry* and machines for agricultural purposes, has been of great advantage to the county. *Hussey's Reaping Machine* has been considerably used, and is highly approved. The report says—" By the aid of this reaper, with the previous use of the cultivator, named below, several farmers have been able to raise and prepare their wheat *for delivery*, in perfect order, at a cost varying from twenty-six to thirty cents per bushel." The cultivator alluded to in this extract, is said to have been introduced by Mr. TRACY, of Wayne county, and it is considered an improvement on Ide's. Recent *improvements in the plow*, by Mr. BURRALL, of Geneva, and others, are commended. The *corn and cob crushers* of SINCLAIR and of PITTS are deemed useful to the stock-feeder; and the *portable mill* of Ross & Co. is spoken of with much approbation.

The distribution of the *Transactions of the New-York State Agricultural Society*, and the circulation of agricultural periodicals, are mentioned as " shedding a vast benefit " on the county. " From these sources," says the report, " science is made to confer lasting benefits upon us, driving away and steadily diminishing the misty, baleful influences of ignorance and empiricism."

The tables alluded to, are made up in admirable form, and might advantageously serve as models for other counties and societies. We give above four of them, showing the amount and value of the four principal products, wheat, barley, oats and Indian corn.

THE QUEEN BEE.—It is well known by apiarians that bees will not swarm without a queen goes with the new colony. In order to prevent swarms from going to the woods, some experienced bee-keepers watch for the queen, and when she comes out of the hive, cut one of her wings, which prevents her from flying. The bees will generally make a " pitch " near the hive, when the queen may be secured, and with the young swarm, placed in a new hive. Sometimes the bees may go to the woods, but will return, if the queen is retained.

The Horticultural Department.

CONDUCTED BY J. J. THOMAS

Care of Fruit Trees.

It often happens that young fruit trees, which have been well transplanted and properly attended to in the spring, are neglected at midsummer. The soil becomes hard, and its moisture is withdrawn and its fertility lessened, by a growth of grass and weeds. To remedy this evil, the unskilful cultivator waters the surface, but instead of reaching the roots, the hard soil excludes the water, which only tends to the further hardening and baking of the surface, while the roots remain dry below. Many young trees thus perish in hot weather; or surviving, make a feeble growth, and are more liable to destruction by winter frosts.

Under good management, the soil is kept clean and mellow for many feet about each tree, during the whole season. Treated in this way, the degree of moisture which the earth will retain a few inches below the surface, compared with the meagre supply of a hard or grass grown surface, is surprising, and it renders watering rarely necessary.

Mulching, or covering the ground about the tree with straw, coarse yard litter, or leaves from the wood, will, if timely performed, obviate the necessity of watering, even in extreme cases. Midsummer drouths, will scarcely affect trees thus protected, in connection with a clean mellow surface. A correspondent of *The Horticulturist* mulched 50 trees out of 150, all of which had commenced growth alike. Those which were mulched, all lived. Of the remaining hundred, fifteen perished.

Where, however, trees have been neglected till the period of severe drouth, and where watering becomes necessary the hard surface should be removed as far down as the roots will admit, and the water then poured on, and the earth replaced. Mellowing the surface and mulching will afterwards prove very beneficial.

Instead of watering the roots, which should be very sparingly performed on trees not yet in leaf, a frequent washing of the stems and branches has been found of great advantage to young trees the leaves of which expand tardily. Water applied copiously at the roots, before there are leaves to draw it up, is apt to induce water-soaking and decay; but if the surface of the bark is moistened, immediate absorption takes place through the pores, and a daily repetition, with shading from the sun, will usually restore to freshness and vigorous growth, trees which have become actually shrivelled from drying.

In addition to proper treatment of the soil, and watering, fruit trees need watching against diseases and enemies. The *fire-blight* will soon make its appearance; the remedy is to cut off instantly and burn the limb, two or three feet below the affected part. This course, if faithfully pursued, will in most cases, arrest the disease. The black-knot on the plum needs a similar treatment; but as it spreads less rapidly, little more than the affected parts need cutting off; and where the excrescences are on the trunk or large branches, the wounds should be washed with a solution of copperas. Peach trees should be examined for the peach-worm, which confines itself to the bark at the root, and is hence easily followed in its hole and destroyed. The apple-borer penetrates the solid wood, and is far more difficult to destroy. and it is nearly impossible to save a tree, unless taken early At first, the worm may be cut out with the point of a knife; or if deeper, it may be punched to death in its hole by a flexible wire or twig. It is asserted that the entrance of the borer may be prevented by removing the soil, and applying a wash of sulphur, soft soap, and tobacco water, to the base of the trunk; and that this mixture is so offensive to the perfect insect, that no eggs are ever deposited in bark to which a coating has been applied.

Budding Cherries.

Inexperienced cultivators are often much puzzled to account for their want of success in budding the cherry. Usually, it should be budded earlier than most other kinds of fruit trees; but there is a certain period in the growth of the stock, most favorable to success, varying considerably with seasons and circumstances. If the work is done too early, the buds will not have become sufficiently matured; if too late, the vigor of growth in

59—BUDDING CHERRIES.

the stock will have too much subsided, and adhesion will not take place. The best rule, applicable to all cases, is to insert the buds just as *the terminal buds of the stock commence forming*. Adhesion at this period takes place perfectly, and the inserted buds are usually at that time well hardened. Adopting this rule, we have been quite successful at all the various periods from the middle of summer to the first of autumn.

When the scions are not well ripened, success is greatly dependant on cutting out with the buds a large portion of the wood—say at least one-third of its diameter, or nearly one-half. This prevents the drying of the bud till complete adhesion takes place.

The above figures very distinctly represent the successive stages of budding, and may hence be useful to those not acquainted with this easy mode of propagating fruits, which is not so extensively known as grafting.

Summer Pruning Hardy Grapes.

There are two leading principles to be adopted in the summer pruning of the grape vine:—1. Fruit cannot grow and ripen without the leaves. 2. Shoots and leaves cannot become fully developed in growth, if so thick as to form a dense mass.

The summer pruning of hardy grapes usually consists in cutting or pinching off every shoot, when the grapes are about the size of peas, about three joints above the upper bunch. The object is "to prevent the vigor of the vine all operating in the formation of leaves and wood, and to throw it into the fruit;" as well as to expose the bunches to the action of the sun. Now, the growth and ripening of fruit is wholly dependant on the leaves; and the greater the amount of leaves. provided they are not crowded, and are fully exposed to the light of the sun, the more perfect will be the fruit. For this reason, it is better to reduce the number of shoots, either by leaving but few buds at the winter pruning, or by removing entirely, all superabundant shoots as early in the season as practicable; and to omit *stopping* or shortening the shoots till the fruit is nearly of full size,

or about the end of summer, and then only at the extremity of the shoot, leaving all the well-formed foliage.

A very erroneous opinion prevails that the ripening of the fruit is hastened by its full exposure to the sun, independently of other causes. Experience has amply demonstrated that a fully developed and abundant foliage, itself well exposed to the light and air, is the sole influence in the successful growth and maturity of the fruit. Any cultivator may convince himself of this fact, by wholly defoliating a branch of any fruit tree, before the crop ripens, and by taking off a large portion of the leaves on another, and compare the results with a tree in full and healthy foliage, the quantity of fruit being the same in all cases.

Grafted and Budded Young Trees.

Young fruit trees, which were budded the last summer, and headed down the recent spring, or which may have been grafted this year, should be occasionally examined, and all suckers or side shoots from the stock rubbed or cut off, which would otherwise interfere with the growth of the graft or shoot.

Many varieties of fruit trees, and more especially those which approach a horizontal or oblique growth of their side-shoots, will form crooked trees, if the buds are suffered to take their own course from the stock. This may be prevented, and a neat erect form given to them at the point of union, by tying them up closely to the stock, a few inches of which should be left for this purpose, while the shoots are yet young and flexible. When, in a month or two, they have become stiff, this portion of the stock is pared neatly off, and the wound soon heals, and well-shaped trees are thus obtained. With such erect growing varieties as the Early Strawberry apple, Madeleine pear, and Black Tartarian cherry, this may not be so essential, altho' it still adds to their beauty; but with more spreading sorts, as Roxbury Russet and Fall Pippin, or Elton and American Heart, it becomes quite important. The annexed figure exhibits this mode of treatment.

FIG. 60.

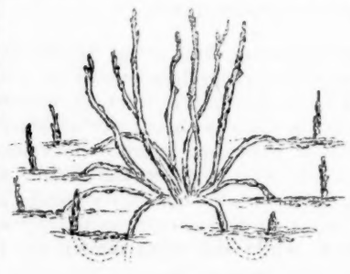
Increased culture of Fine Fruit.

The rapidity of increase in the planting and cultivating of fine kinds of fruit, within the past five years, cannot but afford gratification to every well-wisher of his country. It is only to be regretted that so many fine farms still remain but scantily supplied with the best varieties, and that the majority of the most delicious sorts, are but partially known. E. C. Frost, of Chemung Co., N. Y., furnishes in the *Genesee Farmer*, the following singular instances of a lack of intelligence in this respect, which, happily, are fast passing away to the things that *have been*:

"I once had a hand assisting in setting trees, some fifteen or twenty sorts, and each tree was labelled, who remarked, 'this is all nonsense, so many kinds of apples; there are but two kinds, *sweet* and *sour*.' I have heard persons while eating an apple say, 'what a fine apple this is, how *mealy* and good.' Once a person bought two lots of trees, from different venders, and remarked to one of them, 'I like the other man's trees much the best, because they had so few roots. I could get them into a much smaller hole, and set them out quicker than yours.'"!!!

Layering Grapes.

Those who wish to increase their stock of grape vines, should not neglect the proper season for layering. This is a very simple and very certain way to obtain new plants. First make the soil clean and mellow round the main vine, then bend the present year's shoots down into small excavations made for the purpose, and cover the middle portion with soil four or five inches deep. They will have become well rooted by autumn, and may then be separated and set out as new plants. Each layer, being cut in two at the middle, will make two new vines. The annexed figure exhibits distinctly, the mode of making layers.



61—LAYERING GRAPES.

he Peach Crop.

The remark was made in this paper, early the present spring, that most of the peach crop in Western New-York, had been destroyed by the cold of winter. This remark, founded on an examination of the fruit buds in different localities, nine-tenths of which, on an average, were destroyed, has been misunderstood by the editor of the *Genesee Farmer*. It was not intended to give the impression that there had been a total destruction in any one region; and it might have been added that the uninjured remaining portion, would, in all favorable localities, (in one of which P. BARRY resides,) be sufficient to furnish a good, though not numerous crop of peaches, which would doubtless be of much better quality for the thinning it had thus received; and which a casual observer would not have noticed when the trees were in full flower.

Utility of Birds—Cherries.

We are gratified to perceive the increase of public opinion against the worse than idle practice of shooting birds "*for sport*." Yet we think the advocates for the birds do not usually go far enough. Their plea is extended to the robin, the oriole, the thrush, and the numerous classes of sparrows, buntings and warblers, which far overbalance the slight injury they may commit, by the innumerable insects destroyed by them. But we are sorry to see the king-bird, black-bird, crow, and the owls and hawks, placed without the boundary of mercy. The king-bird, if he eats bees, destroys vast numbers of gad-flies; the black-bird and crow are equally useful in another direction, while every farmer may, by simple preventives, save his corn from their depredations. The snakes and mice devoured by the owls and hawks, are incomparbly grea er than the few chickens they may chance to light upon. If beauty is any protection, what individual among the whole feathered tribe possesses the soft and beautiful plumage of the owl, or the symmetry and noble bearing of the hawk? It is time then, that prejudice had given way to justice and humanity.

We know of but one exception among the birds. This is the *cherry or cedar bird*. We have found it impossible to save our cherries, so long as it is permitted to visit our orchard undisturbed. Cedar birds, unlike most others, do not merely devour a certain portion of the crop and leave the rest. They devour, pollute and mutilate, till nothing valuable is left. Last year we

lost in a few hours, a fine crop of early pears by their depredations; and a neighbor, nearly his entire supply of superb cherries, consisting by estimate, of twenty bushels. Various remedies have been tried. Flags or strips of muslin, hung in the tree, will repel some birds for a time, but cedar birds are not of the number. Covering with nets is costly, and unless the covering is strong, the birds will break through. The suspension of fragments of looking glass, so strongly and repeatedly recommended by horticultural journals, we have found about as efficient as to try to frighten a locomotive with an umbrella; or as the scare-crow, covered with old clothes, the birds building a nest in one of the pockets. The only remedy is shooting, which if steadily pursued for a few days, will drive away entirely the whole flock of cedar birds. If any of our readers have discovered a better remedy, it would prove of great value to the public if made known.

Time for Transplanting Evergreens.

The following observations on this subject, we copy from the *Prairie Farmer;* and after various experiments which we have witnessed, upon thousands of transplanted evergreens, we have arrived, on nearly every point, at the same conclusion. It is true, the object of the writer has not been to give every essential requisite to success, such as keeping the roots wet from the very moment they are taken up, till they are plunged in mud and replanted; or still better, cutting a large cake of earth with the spade, to be removed with the roots; but as far as the remarks go, they are undoubtedly founded on correct practice:—

"As to the best time for transplanting evergreens, there has been much said first and last; nor do we think the public mind clear on the subject as yet. We do not pretend to understand as well which is, as which is not, the best time. A class of writers have uniformly directed to move them in early summer, when they were in full growth; affirming that then the tree will best overcome the debility caused by a removal. We have learned this much, that such a time is probably the worst that could be selected. It is certainly very far from being the best. Evergreens removed at that season, will exhibit the wilting of the tender shoots, even on a wet cloudy day, nor will a ball of earth removed with the roots, serve to mitigate the difficulty. Such trees can only be saved by the most unremitting care and labor.

"We are of opinion at this time, that evergreens are no exception to the rules which regulate the removal of deciduous trees—and that the best time to move them, will be found to be that in which other trees are moved. Transplanting may, perhaps, be continued later than with others, because they do not begin their growth quite as early. But as soon as the new shoots begin to appear, it is time to stop work among them.

"Another standing error regarding evergreens is, that they must not be pruned on removal. All the reason we have ever heard given, is, they exude gum. If any body should ask—'What if they do exude gum?' we should only be able to give the answer made by the Speaker of the Legislature of Hull. The said Speaker had found his fellow legislators disposed to be unruly. His only mode of quelling the disturbers was to threaten 'to name them.' This was, for many a year, sufficiently potent. Finally, a member ventured to ask the Speaker what would be the effect if he did 'name one?' 'Heaven only knows,' said his dignity, 'I don't.'

"We do not suppose evergreens any exception to other trees in regard to the practice to be followed with them, either as to the time of removal, or as to the fact of trimming. The mode of cutting should be somewhat different from that practiced with deciduous trees. They do not push out shoots so easily from the trunk; and it would not be safe to cut them as close. The best mode of trimming, would be that of shortening the branches; cutting off half or two-thirds their length, as should be preferred. This is also the best mode of trimming small deciduous trees; but in removing larger ones, such as are taken from the forest for shade, it is necessary to practice cutting much more severely; unless they are taken from open ground, and dug up with extra care, so as to save as many roots as possible. If carelessly dug, such trees should be shortened from the top one-third or more, and all the side-limbs entirely removed, leaving them like bean poles.

"This mode of treatment would probably be improper for evergreens, though we have never made any experiments with a view of ascertaining how much cutting they would bear.

"In removing evergreens, or any other forest tree, it should be remembered that those which grow in open grounds, or near them—exposed to sun and air, will be much the best—supplied as these are with many more small roots than those grown in the shade of others."

Clean Culture.

W. S. Wait, of Illinois, remarks in the *Prairie Farmer*, "relative to clean culture for apple trees, I am entirely satisfied, and can assure every man who owns a tree, that cultivation will not only *double his crop*, but add at least *one hundred per cent in value to the quality of his fruit*."

Accuracy among Nurserymen.

F. K. Phoenix, an intelligent and accurate cultivator, residing at Delavan, Wisconsin, gives the following just remarks:—"Let me tell nurserymen that if they would live and flourish in this age, THEY MUST BE correct. The fog that has been so long and so thick about their business, and that shielded them in the perpetration of many of their errors, is fast being dissipated. The time is coming, and indeed now is, when a good reputation in their business will be worth more than anything else. Not a reputation for *integrity of purpose* alone, but for that perfect knowledge and precaution and care *throughout*, that make mistakes almost impossible, from the getting of the sorts, down through all the changes and manipulations, to the last one of labelling and selling the trees."

Orchard of E. Phinney, Esq.

I have been highly gratified with the "Sketches" of the Lexington (Mass.) farm. But will you allow me to gratify my inquisitiveness, by asking the writer of these valuable sketches, one or two questions.

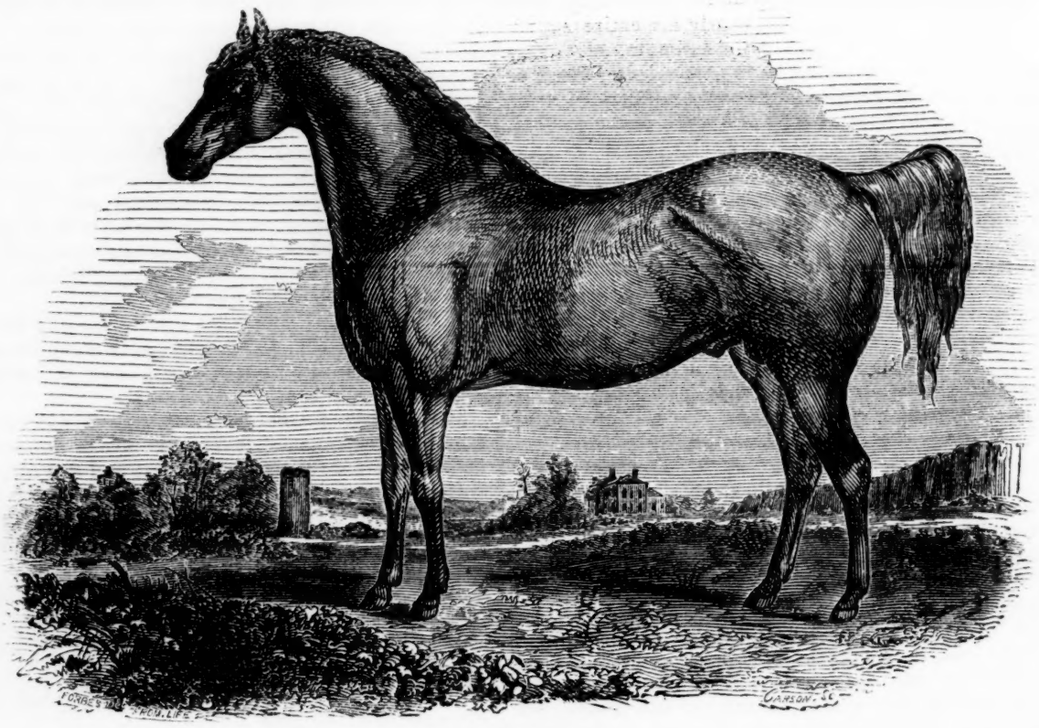
What are those "one or two varieties of sweet apples, which are worth all the rest?"

I think it is stated that the land around the trees is kept under constant cultivation. In this case, is it not necessary to place something around the trees to protect them from injury during the plowing, harrowing, &c.? If so, what kind of fixtures are found most efficient and economical? S. W.

The Scarlet-Flowering Currant.

The following fact, stated in a letter from DAVID THOMAS, will doubtless be interesting to all those who have cultivated this beautiful shrub, but from its tender character, have been compelled to give it winter protection:—

"*Ribes sanguineum* has proved entirely hardy in the south (shady) border, though it has always been tender where the rays of the sun could strike it when frozen. This is a fact worth knowing; and I can ascribe it to no other cause."



Morgan Hunter.

It has been well remarked that, though a picture may convey too favorable an idea of a defective animal, yet it is impossible to portray all the excellencies of a good one. Making due allowances for the latter difficulty, the above figure may be considered a correct likeness of the horse from which it was taken.

"Morgan Hunter" is six years old; was bred, as we are informed, by Mr. EXWELL, of Springfield, Vt.; was got by Gifford Morgan, dam by the same horse.* He was sold by F. A. WIER, of Walpole, N. H., in May last, to Messrs. ACKLEY & GILBERT, of East Hamilton, Madison county, N. Y., and stands the present season, at the stable of S. A. GILBERT, in that town. He is a capital specimen of the Morgan family of horses. In his general form, he possesses in a remarkable degree, what YOUATT lays down as the most important requisite in a stallion—*compactness*—"as much goodness and strength as possible, condensed in a little space." His head is fine, and his eye large and brilliant; his chest capacious, barrel round, loin very broad, back short, quarters long and muscular, flanks deep and full, limbs short-jointed, flat and sinewy. In temper and spirit, he exhibits the intelligence and docility, which characterise most of his near relatives. Like the high-mettled Arabian, he unites the playfulness and good humor of a pet lamb, with the courage and power of the war-horse,—whose 'neck is clothed with thunder,'—'who rejoiceth in his strength,' and 'mocketh at fear.'

The history of the Morgan stock of horses has been fully given in previous pages of *The Cultivator*. Some people, however, who have not fully investigated the matter, seem to entertain the idea, that they originated with a cross of the French or Canadian horse. We have never seen the least evidence that the original, or as he is called, the Justin Morgan horse, possessed any of this blood; and of the four stallions which were kept of his get, we believe the Bulrush or Chelsea Morgan, was the only one that inherited any French blood through the dam.

* For pedigree of Gifford Morgan, see Cult. for 1846, p. 286

We notice various advertisements and cuts of horses, as "Morgans," in the papers of different parts of the country. A comparison of those descriptions and their originals, with the cut at the head of this article, may serve in some degree, to show whether the animals truly represent the stock whose name they bear, or are only counterfeits.

Pasterns of the Horse.

The following sensible remarks on the form of the pasterns, are copied from Youatt's work "*The Horse.*"

"In proportion to the obliquity or slanting of the pastern, will be the stress on the fetlock-joint, and, therefore, the liability of that joint to injury and strain; and also the liability to 'sprain of the back sinews,' from the increased action and play of the flexor tendons; and likewise to injuries of the pastern-joints, for the ligaments will be weak in proportion to their length. The long and slanting pastern is an excellency in the race-horse, from the springiness of action, and greater extent of s ride by which it is accompanied. A less degree of it is necessary in the hunter, who is to unite continuance of exertion with ease of pace, and who, in his leaps, requires almost as much springiness as the race-horse; but for the wear and tear of the hackney, a still less degree of obliquity should be found. There should be sufficient to give pleasantness of going, but not enough to endanger continuance and strength. Experience among horses will alone point out the most advantageous direction of the pastern, for the purpose required; but the slightest observation will prove the necessity of considerable variety in the structure of this part. Let the reader imagine the heavy dray-horse, with his short and upright pasterns, contending in the race; or the race-horse with his long and weak pasterns, endeavoring to dig his toe into the ground to move some heavy weight. The concussion is little in a cart-horse because his movements are slow, and therefore the upright and strong pastern is given to him, which he can force into the ground, and on which he can throw the whole of his immense weight."

The Poultry Yard.

The Curassow.

It is probable that all our domestic birds, were some time or other, reclaimed from a wild state. Such we know to be the fact in regard to some of them. The turkey, for instance, was unknown on the Old Continent till after the discovery of America, where it was found only as an inhabitant of the forest. The common domestic goose has been traced to the European wild goose, and the common duck to the wild mallard.

In reference to the domestication of birds, the question has been asked—"Can we tame more of them?" Everyday's observation brings more or less evidence in favor of the affirmative of this question. The only point to be considered is, whether any birds that are

63—CRESTED CURASSOW.

susceptible of domestication, will prove useful; and even this must be finally determined by experiment, though we may be influenced by probabilities in making the attempt.

The Curassows (*Cracidæ*) are included in the gallinaceous order. The family embraces several species, all of which are natives of Mexico and South America. We are informed that in parts of these countries, they have been long reclaimed, and a writer observes that "it is really surprising, considering the extreme familiarity of their manners, and the facility with which they pass from a state of nature to the tameness of domestic fowls, that they have not yet been introduced into the poultry yards of Europe." It is stated on the authority of Temminck, that they were once thoroughly acclimated in Holland, and were as prolific in their domestic state as any common domestic poultry; but that the establishment where they were kept, was broken up in the commotions which followed the French Revolution. Several of the species are described as of considerable size, of beautiful plumage; and their flesh is said to surpass in whiteness and delicacy of flavor, the common fowl and even the pheasant.

The figures herewith given are those of the crested *curassow* (fig. 63,) and *galeated curassow* (fig. 64.)

"The galeated curassow," says Martin, "equals a hen turkey in size; it is a native of the forests of Mexico, where it lives in large flocks, which frequent the branches of the tallest trees. It is said, however, to make its nest generally on the ground, a circumstance the more favorable for its naturalization as a domestic bird. The young are led about by the female, following her exactly in the same way as the chickens of the ordinary fowl, or of the pheasant or partridge, following their respective mothers, obedient to her call. At first the young feed principally on insects and their larvæ, such as those of ants, &c., which are everywhere abundant; by degrees they begin to feed on various seeds and fruits, much in the same way as does the young of the turkey, which bird, in many of its general habits, this species appears to resemble."

"The crested curassow equals, or rather excels, the preceding species in size, and is a very graceful and noble bird; it is a native of Mexico, Guiana, and Brazil, and in fact appears to have an extensive range over the warmer regions of the American continent. It abounds to such an extent in the woods of Guiana, that M. Sonnini regards it as one of the surest sources of supply on which a traveler penetrating the vast forests of that region, with his gun only, to which he must look for subsistence, may place his reliance. This bird congregates in numerous flocks, which are in general little disturbed by the intrusion of man into their haunts; indeed, so

64—GALLEATED CURASSOW.

unsuspicious are they, that when their ranks have been thinned by the fowling-piece or rifle, the rest have remained quietly perched upon the trees, as if unconscious of the havoc committed amongst them. In the neighborhood of inhabited places, however, where their proximity to man, who is their most active persecutor, has taught them to fear him, they are far more wild, cautious and distrustful, and recede deeper into the recesses of the wood on the approach of the hunter, who nevertheless destroys them in great numbers. They build large rude nests on the branches of trees, constructing them of twigs and sticks, interlaced with stalks of herbaceous plants, and lining them with a bed of dried leaves and grass. According to Azara, the female lays eight eggs (Sonnini says five or six,) nearly as large as those of a turkey, but white and thick-shelled.

"In captivity, the crested curassow is gentle and familiar, and according to M. Ameshoff's experience in his vivarium, may be domesticated with very little trouble. The galeated curassow is a fine bird, but we think this species to be altogether more graceful; its beautiful forward-curled crest is an elegant ornament, it consists of velvety feathers, from two to three inches in length, and is capable of being raised or depressed, at pleasure. The eyes are surrounded by a naked skin, which extends to the cere. The general plumage is of a deep black, with a slight metallic gloss of green, the abdominal region being of a dull white."

Profits of Poultry.

Eds. Cultivator—In looking over *The Cultivator*, I saw a number of accounts of the profits of keeping poultry; having kept an account myself the past year, I propose to add my experiment to the number. My

account commences on the first of April, 1848, with thirty-three hens and two cocks, and is as follows:

Poultry establishment, DR.

To 35 fowls, at 37½ cents each,	$13 12½
22¾ bushels of corn,	13 93
Labor fixing hen-house,	50
Total expense, excluding labor of feeding,	$27 55½

CR.

By 2966 eggs,	$31 23
47 chickens,	7 67½
4 fowls used during the season,	1 16
31 fowls on hand, at 37½ cents each,	11 62½
Total receipt for the year,	$51 69
Deduct expenses,	27 55½
Leaving a balance of	$24 13½

On the 20th of May I shut them up in a shed adjoining the barn, letting them out an hour or two before sundown, each day, the principal object being to prevent their destroying a piece of corn near by. After the corn was out of danger, let them out at noon, that they might have more time to ramble round the farm, and pick up insects,—considering it necessary that they should have an abundance of animal food of some kind to ensure their laying well. The feed was all corn, at an average price of a little more than 60 cents per bushel. Most of the eggs were sold for about $1 per hundred. In July, there were some sold for 13 and 14 cents per dozen, and those sold in September and after, averaged about 14 cents. The chickens did unusually well,—not having lost more than half a dozen during the season; they were sold during the months of July and August, at from 30 to 33 cents per pair. JAMES H. BALL. *Nassau, May* 14, 1849.

The Veterinary Department.

Cure for Heaves.

Mr. PHILO ADAMS, of Huron, Ohio, sends us the following recipe for heaves in horses, which he says he has tried with the best effect:

In the first place, keep your horse on wet or chopped feed until the medicine takes effect, which from the time it was given will not be over two weeks, at the longest. Take one and a-half gills of angle or fish worms; wash them clean; drain the water from them, and put them in some vessel that can be covered tight. Put on the worms spirits of turpentine enough to kill them. Let them stand twenty-four hours; then put them in a bag, and tie them on the bits. Keep them in the horse's mouth, except when you want him to eat, till the contents of the bag have been swallowed. If the horse is not cured, or nearly so, in eight or ten days, give him another similar dose, which I think will effect an entire cure.

Important to Dairymen.

EDS. CULTIVATOR—The experience of many a dairymen has taught him the necessity of a remedy for that obstinate disease, usually denominated "Horn-ail"—the symptoms and remedy of the disease are as follows:

Symptoms.—Cold horns, sudden falling off in quantity of milk; general appearance drooping; dull eyes, &c.

Remedy.—6 spoonsfull soot,
1 " black pepper, ground.
1 " ginger,
1 " salt,
3 eggs.

All well stirred together; add sufficient meal to make it convenient to handle in balls; draw out the tongue with one hand, and pass down one ball as far as practicable—let go the tongue, and hold up the nose till it is swallowed. In like manner give the rest.

The above dose repeat three or four mornings, and it will effect a cure.

The horns should have nothing done to them.

Should the above appear to the editors, of any avail to their numerous readers, they are at liberty to publish. It has saved me many valuable cows. M. S. BAILEY. *Bouckville, Madison County*, 1849.

P. S. Cows hard to milk, may be rendered easy by squeezing the teat full of milk, and passing up a penknife blade three-fourths of an inch.

Neurotomy.

A question has arisen how far a horse that has undergone the operation of the division of the nerve of the leg, and has recovered from the lameness with which he was before affected, and stands his work well, may be considered sound. In our opinion, there cannot be a doubt about the matter. Does the operation of neurotomy render a horse as capable of work as he was before he became affected with the disease on account of which, and to relieve him from the torture of which, the nerve was divided? Is the operation of neurotomy so inveriably followed by capability, and continued capability of ordinary and even extraordinary work, that they may readily be considered as cause and effect? The most strenuous defenders of the nerve operation cannot affirm this. They can only say that they partially succeed in almost every fair case,—that they perfectly succeed in the majority of cases; but they cannot deny that the horse will batter and bruise that foot, when he has lost sensation in it, which should have been tenderly used; that even the hoof will sometimes be lost, after operations performed with the greatest judgment; that the lameness will sometimes return after the animal has gone sound, one, two or three years; and that, after all, there is a little unpleasantness in the action of the horse, from the peculiar manner in which the foot meets the ground when its feeling is destroyed; and that the horse is more liable to accidents, for he will travel on without warning his rider of the evil, after a piece of glass has penetrated his foot, or a stone has insinuated itself between the sole and the shoe; and thus irreparable mischief will be done, before the cause of it can possibly be detected. A horse on whom this operation has been performed may be improved—may cease to be lame, may go well for many years; but there is no certainty of his continuing to do so, and he is unsound.—*Youatt.*

Warts.

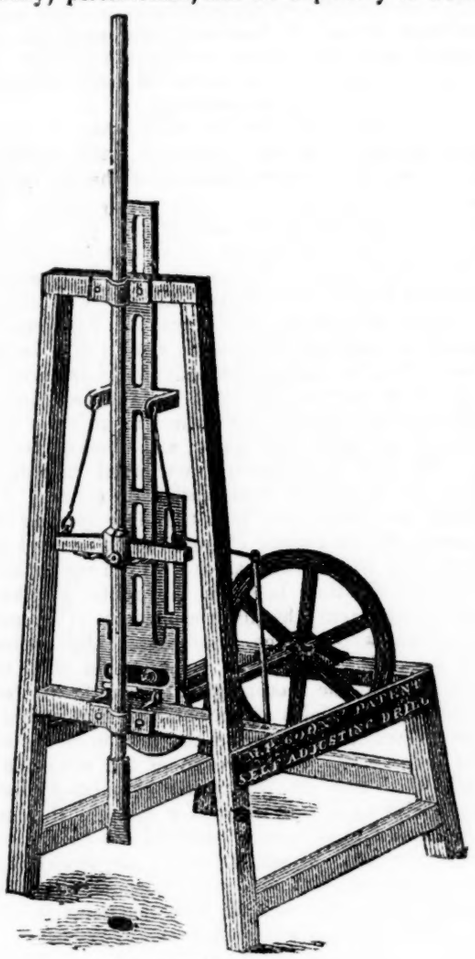
These are tumors of variable size, arising first from the cuticle, and afterwards connected with the true skin by means of the vessels which supply the growth of the tumors. They are found sometimes on the eyelids, on various parts of the skin, and on the prepuce. They must be removed by an operation. If the root be very small, it may be snipped asunder with a pair of scissors, close to the skin, and the root touched with the lunar caustic. If the pedicle or stem be somewhat larger, a ligature of waxed silk may be passed firmly round it, and tightened every day. The source of nutriment being thus cut off, the tumor will, in a few days, die and drop off. If they are large or in considerable clusters, it will be necessary to cast the horse, to cut them off close to the skin, and sear the root with a red-hot iron. Unless these precautions are used, the warts will speedily sprout again.—*Youatt.*

Hoe cabbages while the dew is on, and make hay while the sun shines.

The Farmer's Note-Book.

Coons' Patent Drilling Machine.

This machine is in many respects different from any before used for the same purpose. The inventor claims its superiority on account of its simplicity, cheapness, durability, portableness, and its capability of working



65—COONS' PATENT DRILL.

a line of drills by the power of one man—the machine admitting any number of drill-shafts, and permitting the action of the drills within six inches of each other. Built on a large scale, it may be readily driven by horse, steam or water power. The original object of Mr. Coons, in the invention of this machine, was the advantage of its use in the erection of his patent fence, noticed in our last. A machine of proper size to drill the holes used in this kind of fence, will cost thirty to forty dollars, and will, it is stated, do the work of four hands, and in a more accurate manner than it can be done by hand labor.

Any further information in regard to this machine, may be had by addressing M. P. Coons, Lansingburgh.

Potatoes vs. Corn.

Eds. Cultivator—I noticed, in perusing the May number of your periodical, a piece entitled "Potatoes exhaust the soil," with which I cannot agree. In fact, my experience does not coincide with that of the article mentioned. Five years ago I planted a piece of ground with corn and potatoes; manured the whole at the same time, and distributed it as equally as possible. The next year, sowed it with oats, and as I was in the field one day, I looked at them to see how they were growing, and noticed quite a difference in them. The oats, where I had taken off the potatoes the year previous, were at least one-third larger than where I had taken off the corn. The next year I mowed the piece, and there was quite as much difference as with the oats, and it is plainly to be seen to this day. Since that time I have taken notice, and have found the effect to be similar. Now how can this difference be accounted for, if corn is not a greater exhauster of the soil than potatoes?

If what our friend stated be true, (which I doubt not,) it must be that these crops operate very differently on different soils.

I wish some of your numerous correspondents who have made observations, would give us the result of their experience in this particular. A. K. *Hartford, May* 18, 1849.

The Farmer's Vocation.

Eds. Cultivator—Those that obtain an 'honest living' by whatever means employed, are entitled to respect. All trades, occupations and professions, have their advocates and followers, and it is no part of our business to institute invidious comparisons as to which is the most respectable. As farmers, we have no reason to be ashamed or to think lightly of our vocation. Though we may be obliged to obtain our living by the 'sweat of our brow,' it need not lessen our independence or enjoyment. We are not obliged to bow to kings or despots for our daily bread; nor wait the capricious will of another, to receive the reward of our labors.

Not many years ago, there seemed to be a disposition among farmers' boys to leave the farm and engage in mechanical, mercantile and professional pursuits. Then farming was not looked upon in the same light that it is now, being considered an employment that needed little knowledge; one, which those the most ignorant, or those of the feeblest intellect might pursue advantageously. Since then, "a great change has been going on in the public mind" in regard to it. It is becoming better understood and appreciated. Agricultural journals have called attention to the importance of agricultural pursuits, and political, scientific and even literary periodicals have lent their aid to advance the interests of the farmer. Now, men holding the most exalted positions, in government, in theology, in science, or in literature, may engage in agricultural occupations, without compromising in the least, their dignity or respectability.

To engage in farming understandingly and successfully, requires mechanical skill, intellectual action, and scientific knowledge.

Mechanical knowledge implies the use of tools. This is an important branch of husbandry, for it requires as much skill to guide a plow or swing a scythe rightly, as it does to use a plane or trowel. This knowledge in farmers is not intuitive; it must be learned. Farming is practical business, and practice in the use of tools is the only way to become skillful in using them. In this respect, farming is a trade, and requires mechanical skill.

Farming requires intellectual effort. In the management of a farm, there must be thought and calculation. Even if a person works alone, he must think. He should study to know the best means adapted to the end in view. It may seem easy enough to know the proper time to sow, plant, or harvest, but to do these things in the best time and way, is difficult. And so of all the work of a farm. There is a great difference between going to work understandingly, and at hap-hazard, thinking nothing of the circumstances. True it is that like causes acting under like circumstances, produce like effects; but here, circumstances differ so much

between cause and effect, in each separate instance, that they must be scanned closely in order to obtain even an approximate knowledge of the result. A lawyer must learn fully, the case of his client, and a physician must examine closely his patient, to know how to act, so a farmer should study his business to know how to direct his labors.

A farmer should be well informed. Not only acquainted with the various modes of cultivation in his own vicinity, but as much as possible, with that of the different parts of his own country, and of all other countries. To do this, need not *cost* a great deal in this age of cheap reading. The multiplicity of publications and periodicals adapted to his wants, so cheap withal, renders him without excuse, if he is not constantly adding to his stock of information. In the 'good time coming,' it will undoubtedly be necessary that the farmer not only be well informed, but *educated*.

It is also important that the farmer should have some knowledge of chemical science. He has to do with nature, and in her operations, from the reviving of vegetable life in spring, to the ripening of the last fruits of autumn, chemical changes are constantly taking place. The elements of the soil enter into new combinations in all that grows out of the earth. These elements and their combinations should be understood. If a soil is fertile or sterile, it should be known why it is so. If a crop fails, it should be known what ingredients of soil were necessary to perfect it. The 'whys and wherefores' of all this are generally guessed at; if we guess right, well and good; if wrong, we must make the best of it. How much better is it to *know*, than to have unsatisfactory opinions of the relation between cause and effect in the processes by which Nature accomplishes her purposes. Farming *is* a science, and a theoretical knowledge of chemistry is of great advantage in conducting its operations successfully.

'All honor to the toiling hand,' but more especially to him who discovers means to advance agricultural interests, or to increase agricultural knowledge. W. L. EATON. *East Weare, N. H., May*, 1849.

Driving Swine.

EDS. CULTIVATOR—An article in the February No. of *The Cultivator*, on "*removing swine*," suggested the propriety of sending to you for publication, my method of removing swine, *on foot*.

Swine are, proverbially, a most untractable and contrary animal; and are not a little akin to some bipeds of the human species in this respect, whom we must attempt to drive in an opposite direction, in order to get them where we would have them.

When I wish to drive a hog—if I wish to do it *easily, expeditiously*, and with the *greatest safety*—(for I have often seen hogs dogged and beaten, in a most unmerciful and cruel manner, and all to no purpose)—no matter how large they are, I tie a small rope around one of their hind legs, while they are eating, at their trough; and then let them jump: in a few moments they will be as manageable as an ox with a ring in his nose, and may be driven where we will. With a rope around his leg, a hog may be driven much sooner and with less effort, than a score of men, boys and dogs could drive him with all their whips and clubs. Sows with pig may be removed in this way, where the distance is short; and thereby avoid all danger of injuring them in a contrary chase, of which there would be much danger, if they were not disposed to be driven quietly.

This mode of operating would, without doubt, prove quite as efficient in driving any other animal, that was not accustomed to be led. Let it be tested. S. EDW'DS TODD. *Lake Ridge, Tompkins Co.*, 1849.

A Cultivator and "The Culivator."

EDS. CULTIVATOR—A cultivator for the soil, is used with universal benefit. Some soils, however, will receive more benefit from its frequent use than others. Light soils lose nearly as much, when used too frequently, in the escape of gases, as they gain from stirring the ground, killing the weeds, &c. This loss might be avoided, by the addition of a small roller immediately behind the cultivator, and attached to it, to slightly press the surface, which will prevent any increase of evaporation—a source of more loss, particularly in light soils, than leaching.

"The Cultivator" for the mind, may be used with equal success. Should it cause, in some minds, a tendency towards a superabundance of theory, let the soil be rolled or pressed by a little bodily labor. Experience will tighten up the surface, and prevent any loss except by *leaching*, which never can be increased by "The Cultivator." Stirring the soil is probably the principal benefit derived from the use of a cultivator; therefore, everything in the way of its frequent use should be removed if possible, that it may be applied oftener than the killing of weeds might require.

All may observe, who will try the experiment, the difference in a field of corn, where a cultivator has been through one part four times, and another twice; but the difference is frequently attributed to some other cause, or accidental combination of causes; it being difficult to comprehend how the mere stirring the soil between the hills could change the colour and growth of the crop to such an extent. When we consider the attraction existing between the roots of plants and their nourishment, through the medium of innumerable spongioles, whose office is to search after, select and suck up such materials as are fitted for their use, we shall see that the loosening of the soil facilitates their approach to particles of nourishment that would otherwise be unattainable, while the motion of the soil admits more freely the approach of the attracted particles. This may be illustrated by mixing fine steel filings with sand, spread upon a table, with a magnet in the midst, and stirring the mixture in any way, or jarring the table by striking on it, the steel filings will be seen to approach the magnet every time their repose is disturbed, while all other particles in the mixture will be as liable to recede as approach.

There is something striking in the comparison between a cultivator for the soil, and "The Cultivator" for the mind; but there is a difference: while the one kills the weeds, and puts in motion the soil, thereby facilitatiug the approach of the roots and their nourishment, the other not only fills the place of idle speculations, puts the mind in motion, and while it facilitates the approach of nourishment from other sources, actually furnishes some of the most essential ingredients for the strongest growth.

As the earth may be cultivated more successfully by the application of a properly cultivated mind, so the mind may be fertilized by contemplating the causes and effects of a well cultivated soil. "To him that hath, shall be given," is written by divine inspiration, and copied by Nature into every well cultivated field, as God's truth. The soil that sends forth the most luxurious growth is assisted most with nourishment afforded by the atmosphere. That every plant depends more or less upon the atmosphere for sustenance, is universally admitted. That most plants draw a large share of their support from it, is also evident, from the result of numerous experiments. As the greater growth of root extracts more from the soil, so the more luxuriant the leaf, the greater the capacity to draw from the atmosphere. When you add fertility to the soil, by manuring and by judicious cultivation, so as to increase the growth of

your crop, you place yourself in the situation of him that hath, whereby you will receive, not only the advantages of a more retentive soil, but the fertilizing qualities in the atmosphere, which perhaps have floated over many barren and badly cultivated fields, where the crops had not the surface of leaf or strength of constitution to attract them. Thus, you not only receive the increase of your two or five talents, but that which is taken from him that hath not. Such are some of the inducements held out to the farmer, "to improve the soil and the mind." DEAN. *Lyonsdale, February*, 1849.

Transmutation.

The notion of the transmutation of wheat into chess, is not yet quite extinct. The editor of the *Michigan Farmer* cautions his readers against the attempt to raise wheat on wet land, because, he says, "*if the plant survive, it will be more likely to be chess than wheat.*" He declares his readiness and ability to maintain his "position," that wheat will change to chess, by "incontrovertible facts;" and adding a word of lamentation on the "blindness and inconsistency of poor human nature," he goes on to state that—"The men who maintain that wheat never degenerates into chess, generally undertake to sustain their position by theoretic reasonings, in opposition to the most undoubted facts before their eyes; and yet these are the very men, generally speaking, who rant against book-farming, because, they say, it consists in visionary theories, regardless of practical experience"!! The article concludes by reiterating the assertion, that—"the doctrine of transmutation may be triumphantly sustained."

The obstacles to the successful culture of wheat on wet ground are sufficiently numerous, without adding the fear of transmutation. The idea, however, is new to us, that—"the men who maintain that wheat never degenerates into chess, are the very men, generally speaking, who rant against book-farming"! But we hope our friend will favor the public, as soon as practicable, with his "incontrovertible facts," in proof of transmutation; for we have never seen any such proof. The doctrine has been long asserted, and to its advocates belongs the duty of demonstrating its truth. It is contended that wheat, under certain circumstances, is converted into chess; and if it is so, we do not see why the fact may not be clearly established. For instance, take a quantity of earth, suitable for the growth of wheat, and subject it to such a degree of heat as will be sure to destroy the vitality of any seeds it may contain; put the earth in pots of suitable size, and sow a certain number of wheat grains in each; note the number which come up. Subject the plants to the process deemed most likely to cause transmutation.

It is an original law of nature, that the earth shall bring "forth grass and herb, yielding seed after its kind." [Gen. i, 12,] and the transmutation of a plant into another, of a distinct genus, is so great a deviation from this law, that nothing short of the most unequivocal and positive evidence can warrant its belief.

We notice that the *Berkshire Culturist* hints at a "solution of the chess difficulty," on the ground of *cross-impregnation*. A correspondent of that paper gives some instances of the intermixture of different kinds of beans; and the editor, in commenting on the circumstance, relates similar instances of the mixture of different kinds of Indian corn. We see nothing particularly striking or unusual in the cases cited; certainly, they fall very far short of touching the point under consideration,—the mixture of wheat and chess. If the "scarlet runners" (beans) had mixed with peas, or the Indian corn with wheat, there would have been something more analogous to the supposed mixture of wheat and chess. But the mixture mentioned, was with plants of similar varieties, belonging to the same species. Wheat (*Triticum*) and chess (*Bromus*) are not only different species, but of different genera,—as much so as wheat and oats, or wheat and Indian corn. When it is proved that these hybridize, we will admit, with our friend of the *Culturist*, that "the subject is worth examination."

But hybrids, whether plants or animals, show traits of their diverse parentage. Nothing of this kind is exhibited by chess. We have never seen or heard of any special variation in the species (*B. secalinus*,) to which it is alleged wheat changes; and there is no reason to doubt that it has produced "seed after its kind" from the beginning.

No Protection to Crows.

EDS. CULTIVATOR—The New-York *Farmer and Mechanic*, contained an article copied from a Massachusetts agricultural paper, headed "Protection to Crows," in which the writer asserts that crows are a benefit instead of injury, to the farmer; that they do more good by destroying worms and insects, than injury in pulling up corn; that soaking corn in tar-water and rolling it in plaster, will prevent crows from pulling up corn. I know by experience, that corn thus prepared is not always secure from the attacks of crows; true, they will not eat much of it; but they will pull a hill here, and a hill there, in hopes of finding the pure article, until a large portion of the corn is pulled up.

Twine, stretched around the corn field and several times across it, is the method generally adopted by the farmers in this neighborhood to protect their corn-fields from crows, and it rarely if ever fails to be effectual. But the damage done to our corn-fields, is but a small part of the sum total of the injury that we have to suffer from these rascally depredators. I am their decided enemy, and believe them to be the most mischievous and thievish of the feathered race. They destroy our eggs, chickens, young turkeys, and sometimes even venture to attack young lambs, which they soon kill by plucking out their eyes—however they rarely, in this section, kill lambs, except when these animals are enfeebled by cold storms, and lie in fields or woods remote from the house. When hens or turkeys have nests a little distance from the house or barn, I have known them to watch until the hen or turkey left the nest, and then seize the egg and away.

Two years ago, the spring was far advanced, and I could not find the nest of an old hen turkey. After many fruitless searches, one morning I missed her, and after hunting a short time, saw an old crow perched on the highest of a group of fruit trees, (about twenty rods from the house,) beneath which was the turkey on a nest, among the high grass in one corner of the fence. Thinks I—"old crow, you don't get these eggs." I went to the house, watched to see the turkey leave the nest. At last I saw her coming towards the house, and started to get the eggs, when the crow, although I was in full sight, and halloed, flew into the nest, siezed the newly laid egg, and flew away. The nest was empty. To carry eggs, they thrust their bills into them. Their destruction of the eggs of birds is great, especially of those species which build open nests. In western New-York during the last few years, crows have increased, while many other species of birds have become rare. The American Robin, Ferruginous Thrush Cat-Bird, and many others are seldom seen; while many species, as if to avoid the crows, build their nests among the trees and shrubbery near dwellings, both in the village and country, where the crows dare not come. The birds' eggs and young birds destroyed by crows, would, if suffered to live, do vastly more good in the destruction of worms and insects, than crows, besides enlivening the country with their presence, and

cheering it with their songs. The crows have not a redeeming quality that renders them entitled to be saved. They are almost universally obnoxious to the agricultural community, and various are the methods employed to destroy them. They know enough to avoid the marksman, and are rarely shot. The most effectual way to destroy them, is to steep corn in hellebore or strychnine, and strew it around some dead carcass in the winter season. The carcass should be in some field or woods, out of the way of domestic fowls or animals. The late severe winter propably destroyed many crows, since they are less numerous than usual this spring.

The American crow has been supposed to be identical with the common carrion crow of Europe, but it is now considered by ornithologists to be different, from its smaller size, shape of its tongue, gregarious habits and voice. It is also much more timid and fearful of man. Nuttall says that the European crow is so familiar and audacious in some parts of the Levant, that it will frequent the courts of houses and like a harpy alight boldly on the dishes, as the servants are carrying in the dinner, and carry off the meat, if not driven away by blows. S. B. BUCKLEY. *West Dresden, Yates Co., N. Y., May*, 1849.

Catching Red Squirrels.

EDS. CULTIVATOR—There have been in *The Cultivator*, several modes recommended for the destruction of rats and mice—those vexatious destroyers of the farmers' grain; but nothing has been said, with regard to the destruction of *red squirrels*, which find their way into the corn crib, however securely it may be guarded against the entrance of rats and mice. Every one who is acquainted with these little marauders, knows too well how readily he will gnaw a hole through the barn roof, or into the granary; and how frequently is it the case that they enter the domicil of the farmer and plunder the precious fruits, "which autumn richly pours"—chestnuts, hickory nuts, butternuts, &c., which had been safely stored for use, during the long and pleasant evenings of winter. Where they are so numerous as they have been in this region the past few seasons, their destruction is an object, as worthy the attention of the farmer, as the destruction of any other animal, which wastes and destroys the fruits of the farmer's industry. One red squirrel, permitted to live about a barn, or corn crib, will destroy more grain than two rats; besides the injury they are liable to do to the building by gnawing holes in the roof or the ceiling. As they are always so quick and shy in committing their depredations, and as we cannot always avail ourselves of an opportunity of demolishing them with "*Mexican grape*," and as they are not readily caught in common traps, I have practiced a more expeditious and *funny* mode of capturing them—which will be sport for boys.

Unlike the black and the gray squirrels, which seldom or never seek a refuge in a hole in the rails of a fence, when pursued, the red squirrel searches out all such hiding places in the fences where he is accustomed to run—as if to seek places of safety and concealment, when pursued by the sportsman. Although they are bold in approaching places, where the black and the gray squirrel dare not make their appearance, still they are exceedingly suspicious and shy of anything which has the appearance of a trap. Taking advantage of their remarkable propensity to run into holes, I lay a pump-log, or a bark which has rolled together, or anything which has a hole in it large enough for them to enter, upon the fence; and as the dog or anything else chases them along, they will take refuge in this *trap*. Then if I wish to take them alive, I hold a bag over one end, and punch them out with a pole. SPORTSMAN.

Preservation of Grain.

The report on the Breadstuffs of the United States, made to the Commissioner of Patents, by LEWIS C. BECK, M. D., contains many facts worthy of special attention. The remarks in regard to the preservation of grain, exhibit in a striking light, the necessity and advantage of adopting some artificial mode of drying. The losses which are sustained from the souring of flour, and the chemical changes in breadstuffs, by internal moisture, is estimated at from $3,000,000 to $5,000,000 annually. The practice of shipping grain in bulk is considered the cause of much injury.

The remedy proposed, is the removal of a portion of the water naturally contained in flour and grain. But the process of drying requires great care. In regard to ordinary kiln drying, it is observed:—"The passage of the grain or flour, however rapidly, over highly heated surfaces is apt to scorch, and thus give them an unpleasant flavor. From the rapid evolution of the moisture in the form of steam by the heat thus applied, unless proper ventilation be also secured, further injury will probably result. The steam again condensing into water, upon the cooling of the flour, may accumulate in particular parts of the mass operated on, and, thus, perhaps, render it at least equally liable to injury as it would have been without the employment of this process."

The report further observes that "in those samples of wheat flour that have been exposed to a degree of heat high enough to expel all the water, the gluten is less tough and elastic—a proof that its quality has been impaired. It is probable that the proportions of dextrine and glucose may thus also be increased at the expense of the starch. Under these circumstances, a subsequent exposure to moisture and a slight elevation of temperature, establishes the lactic acid fermentation, which, I suppose, is the chief cause of the *souring* of flour."

Mr. J. R. STAFFORD'S process of steam-drying, of which we have several times spoken, is thus noticed:

"The advantages to be derived from artificial drying, are more fully attained by the invention patented by Mr. J. R. Stafford, in 1847, than by any other plan with which I am acquainted. It is based upon the process for drying organic bodies usually adopted in the laboratory. The grain or flour is brought into contact with a surface of metal heated by steam, and a due degree of ventilation, so important to the completion of the drying, is secured. As the heat is not raised above that of boiling water, there is no danger of injuring the quality, color, or flavor of the substances subjected to its action. The heat is, moreover, uniform, and the expense is said to be less than that of the mode of drying heretofore generally adopted. By Mr. Stafford's apparatus, 16 or 17 pounds of water are expelled from each barrel of flour; this reduces the proportion of water to four or five per cent., an amount too small to be productive of injury. Absolute dryness cannot be easily attained except by a long exposure of the flour to the heat, and it is not required for its preservation; a reduction of the amount of water to the small per centage just stated, has been found to be amply sufficient to secure this object. I cannot, in my opinion, render a more important service to dealers in breadstuffs, than to recommend strongly the employment of this or a similar process of drying."

The grain and flour should be packed in clean and tight barrels, and kept without unnecessary exposure to the air.

Since the above was put in type, we have received a letter from Mr. STAFFORD, stating that during the past year there have been but few shipments to England, of meal dried by his process, and none of corn: that Messrs.

Allen & Whittlesy, and Messrs. Gibson, Shotwell & Co., of New-York, have made some shipments of meal, and that the parcels have brought from one shilling to two shillings more per barrel than any other dried meal in market. Mr. S. further states that the reason why there has not been more meal sent abroad, is, that the home and Canada demand has been so great as to take all that has been made by the machines now in operation. Much of that which has gone to Canada, is said to have found its way to the West Indies and South America. Mr. S. says the price of the meal sent to New-York has been from two to three shillings per barrel more than the Jersey or Brandywine meal.

English Turneps.

It has been a Yankee maxim, from the days of the Pilgrim fathers, that—"turneps should be sown on the 25th of July, let the weather be wet or dry." The common English flat turnep will usually do well, if sown on proper soil, any time from the 20th of July to the 10th of August. They may not yield so largely as when sown somewhat earlier, but the roots will be sweeter, and will keep better.

The white turnep is not a very nutritive vegetable; but as it may be grown on lands from which a crop of hay or grain has been taken, the same season—is a good *fallow* crop, leaving the ground in good condition—and is useful in feeding sheep, cows or young stock, in the early part of winter, it may be made a profitable crop, in many instances. The grass or grain stubble may be plowed in, and a dressing of fine manure, compost or ashes, spread and harrowed in. The seed may be sown with a seed-drill,—the quantity varying from one pound to two pounds per acre. If the seed vegetates well, and the young plants are not attacked by insects, a pound to the acre will give a "good stand"—the rows being twenty inches apart,—but there is more certainty in the use of a greater quantity, and to guard against emergencies, it is better to use plenty of seed. After the plants have got well into "rough leaf," and are secure from injury by the fly, they should be thinned to the distance of six to eight inches in the rows; and the ground should be kept clean by the harrow, cultivator and hoe.

Cement for Cellars.

Eds. Cultivator—A cellar may be made dry without draining, by means of *good* masonry; that is, if both materials and workmanship are of the best kinds for that purpose. The excavation being made to any depth required, and wide enough to allow the walls to be faced on both sides, let the foundation be laid with at least six inches of concrete, in two layers of three inches each; the first left to *set*, so as not to be easily disturbed before laying the second.

The concrete to be made as follows: Take any kind of sound durable stone, and break it as is done for McAdamised roads; the largest pieces to be no larger than a pullet's egg, and the smallest the size of an acorn. Take, also, of the best water lime, or cement, one part, and of sharp sand, perfectly free from mud or loam, three parts, and in a tight mortar box, without water, incorporate thoroughly the cement and sand, until every grain of the sand be separately rolled in the cement. Then add water to make it mortar, which must be thoroughly tempered, so that if it be kept to stand a while, no water shall collect in any depression left on the surface of the heap, which is the best test, perhaps, of its being sufficiently worked, while at the same time it is sufficiently moist to be pliant with the trowel.

The broken stone is now to be mixed with the mortar, in such quantity as will leave each piece of stone fairly embedded in the mortar, and as much stone as possible with that provision. It is then with dispatch to be laid down in the foundation, as already directed, and of such width as to project a little on each side of the thickness of the wall, and, of course, around the whole cellar.

The floor will be of the same material, and is to be done in the same way, the whole of each layer to be well beaten down and compacted with the back of a shovel; and, at last, all to be finished with a thin coat of the cement mortar. The floor, however, need not be laid until all the other work is complete. On the foundation, as described, the walls are to be built, with equal care, of stones and mortar, made of one part of cement and three of sand. Every crevice must be perfectly filled with mortar, and the stones so completely bedded and pointed as that no one piece may touch another.

As Mr. Johnston says about draining, the true way to go about this kind of work, is to go at it as though it was to "cost nothing," and there will be satisfaction in the end.

In making the concrete, the broken stone should be perfectly free from dust and dirt of every kind; and unless it is clean, should be washed. If inland sand is quite clean, it is better than lake sand,—the latter being rounded by the rubbing of the particles against each other, caused by the motion of the water.

There should be no quick-lime used; it has a tendency to slack longer than people think for, and prevents the cohesion of the cement.

Frost will not injure it if once fairly set; but that also requires time, and it should be protected by some nonconducting substance on the ground, and as high as the walls outside, for at least one winter; and the work should be all completed before the frost comes.

Very good cement can be had in Buffalo. I do not remember the maker's name, but I think the place was called Avon; and I think the merchant was Daw. It cost $1.75 per barrel some years ago. W. S. *Ellicottville, May* 25, 1849.

Wire Fences.

Eds. Cultivator—I was much interested with a late article in your excellent journal from H. V. L., on the subject of Wire fence. There are many who, like myself have never seen such a fence, and would like a little further information. What is the mode of fastening the wires at the end of the fence? What means are used to tighten the wires, and is there not danger of their breaking in winter from the effects of frost, unless they are loosened? Boring holes in the posts, while it is attended with considerable labor, must tend to weaken them, if not to hasten their decay.

Why might not small staples driven into the posts to confine the wires, answer well instead of holes?

Would wires 5 inches apart, and 20 feet between posts, make an efficient *sheep* fence? If not, why might not smaller wires (say No. 16) be placed between the larger ones. Will those who understand these matters, be so kind as to give us a little "more light." S. W.

Sheltering Sheep.

Eds. Cultivator—Permit me to call the attention of farmers in Ohio and other sections of the country, to the importance of providing shelter for sheep and other domestic animals. I have had some experience in keeping sheep at stacks, exposed to the drizzling rains and sudden changes of the weather during the winter season. In the winter of 1847—8, I put one hundred to stack, and gave them plenty of hay and some grain through the winter. The loss was over 20

per cent. I have no doubt they ate a fourth more than the same number that were protected, of which the loss was only two per cent. In consequence of this result, I built ample sheds during the past summer, provided with hay-lofts—one 60 by 20, and another 55 by 20 feet. (I will just observe for the benefit of those who are building sheds of this kind, that 24 feet is about the proper width, and the additional expense of four feet is trifling.) These sheds are set to two barns, and enclose the yard on three sides. Here, in separate divisions, I have kept my sheep the past winter. They had good hay and plenty of water, and the yards were strawed three times a week. I feed some grain to my lambs in winter, and give some to ewes in spring. My loss up to this time (April 15th,) is half of one per cent. Many of my sheep were in low condition in the fall, yet I would like to compare them with any flock of the same number, that have had no protection. E. HALLEY. *Cleveland, Ohio, April*, 1849.

Legislative Aid to Agriculture.

EDS. CULTIVATOR—I wish to make some inquiry in regard to the money raised by the legislature for distribution to agricultural societies. I am informed by our late representative, that the money designed for counties which have no organized agricultural society, still lies in the State treasury. I find by referring to the *Transactions* of the State Society for 1847, that there were but forty-one county reports; and it is probable many of these societies were not organized for several years after the appropriations were made. It appears to me that some legislative action should be taken at an early day, in reference to this matter. In relation to those counties where there are no organised agricultural societies, and where the people are unwilling to organize, it seems to me that there would be nothing wrong in taking their quota of the money which now lies idle, or is used for other purposes, and distribute it among the counties where there are such societies. I have no doubt that this course would cause the formation of societies in several counties, and would be the means of doing much good. LOTAN SMITH. *Fallsburgh, N. Y., May*, 1849.

Agricultural Chemistry.

WE have been furnished by Mr. J. H. SALISBURY with the following account, prepared by him for the *Transactions* of the New-York State Agricultural Society, of some investigations connected with the composition of the tomato, and the fruit of the egg-plant. These investigations are interesting from being mostly in a new field, and as relating to substances which are coming more or less into use as edibles.—EDS.

The tomato and the egg-plant belong to the order Solanacea—the *potato tribe*. The properties of many of the plants of this order are very interesting and important. Many of its families contain a powerful narcotic principle, which renders the herbage, and generally the fruit, very poisonous. A number of these bodies are among the most active medicines: as *belladona, henbane, stramoninm*, &c.

Among the species of the Solanum family, a number are cultivated for the palatable and nutricious food which some parts of the plant furnish, while others are highly valued as furnishing some active principles used in medicine. Those of the former class most highly esteemed, are the potato, tomato, and egg-plant.

The part of the plant eaten, when mature, is generally free from any deleterious qualities; although the herbage of the potato plant, and especially the youug sprouts, contain a poisonous body,—a vegetable alkali called solania. The herbage of the tomato and egg-plant probably are also pervaded by a poisonous principle, though I do not know as this has as yet been actually demonstrated.

TOMATO OR LOVE APPLE.—(*Solanum lycospersicum.*) This, like the potato, grows wild in South America, and is supposed to be indigenous to that country. It was introduced into notice in 1796, soon after the potato It has been cultivated and used for a long time in Europe, and for some time in the southern states; yet its introduction into the northern and eastern states is of a comparatively recent date. The extent to which it is now cultivated is sufficient evidence of the high esteem in which it is held. Of the numerous forms in which it is used, it is quite unnecessary here to speak.

There are two distinct varieties in cultivation, the *red-fruited* and the *yellow-fruited*. Of each of these there are several sub-varieties, the principal of which are: Of the red—the *common large-lobed*, the *small*, the *pear-shaped*, and the *cherry-shaped;* of the *yellow*—the *large-yellow*, the *small*, the *pear-shaped*, and the *cherry-shaped*.

The fruit of one of the red sorts was examined by M. M. Fodere and Hecht,* who give the following bodies as the result of their investigation:

1. An acid seemingly peculiar. It is destroyed by distilling heat. In the berries, it is probably combined with a bitter matter, thought to be solania.

2. A volatile oil, difficult to separate, and which evaporates with great rapidity.

3. An extracto-resinous brown matter, of a pitchy consistency, having a strong smell, a bitter-sweet taste, soluble in water, and partly soluble in alcohol and ether.

4. An albuminous matter, which readily putrifies.

5. A little mucous sugar, detected by the smell of caromel at the commencement of combustion.

6. Sulphate of potash, a little chloride of potassinm and calcium, pure potash, and probably a vegetable alkaloid, which resides much more abundantly in the leaves of the plant.

This examination was made some years ago, when the methods of analysis were less perfect than at present. If solania exists in the berries, its amount must be very small, as the raw fruit is often eaten in large quantities without any bad results; in fact, the effects are considered beneficial rather than otherwise.

The kind here examined was a very fine seedling from the *large red*, raised and furnished by Mr. RATHBONE, of Kenwood, Albany. The fruit only was analysed.

Percentage of water, dry matter and ash.

335.8 grains of the fresh fruit gave, of

		Per centum.
Water,	318.20	94.758
Dry matter,	17.60	5.242
Ash,	1.12	0.334
Ash calculated on the dry matter,	....	6.372

The above shows that there is but little over 5 per cent. of dry matter, and 94 per cent. of water, in the fruit. The ash is highly deliquescent.

Composition of the ash.

Carbonic acid,	11.050
Silicic acid,	1.775
Sulphuric acid,	1.790
Phosphoric acid and peroxide of iron,	24.075
Lime,	0.075
Magnesia,	1.610
Potash,	20.805
Soda,	25.535
Sodium,	2.790
Chlorine,	4.245

* Journal de Pharmacie, xviii, 106.

Organic acid,	4.550
	98.250

The phosphoric acid, potash and soda, make up about 70 per cent. of the ash.

Proximate organic composition.

		Calculated without the water
Sugar and extract, with tartaric, citric and malic acids,	3.320	59.064
Albumen,	0.210	3.736
Casein,	0.207	3.682
Dextrine or gum,	0.547	9.732
Fibre, with the coloring matter,	1.010	17.968
Matter separated from the fibre by a weak solution of potash,	0.327	5.818
	5.621	100.000
Water,	94.758	
	100.379	

Besides the bodies given in the above analysis, it contains a small quantity of volatile oil.

The matter separated from the fibre by a weak solution of caustic potash, gave the characteristic color of albumen with sulphuric acid. Three acids were noticed in the tomato, which resemble tartaric, citric and malic. These acids were not quantitatively determined. From the qualitative examination, the citric acid appeared to exist in the largest proportion. This investigation was commenced so late in the season, that it was impossible to get good fruit enough to extend the inquiry as far as it would have been desirable. The subject will be resumed at the earliest opportunity, for the purpose of examining more fully these acids and the coloring matter.

Amount of the several bodies, organic and inorganic, in 1000 lbs. of fresh tomatoes. Calculated from the foregoing analysis.

	Expressed in lbs. and decimals of a lb.
Carbonic acid,	0.3817
Silicic acid,	0.0606
Phosphoric acid and peroxide of iron,	0.8401
Sulphuric acid,	0.0611
Lime,	0.0026
Magnesia,	0.0549
Potash,	0.7191
Soda,	0.8899
Sodium,	0.0952
Chlorine,	0.1472
Organic acids,	0.1576
Amount of ash in 1000 lbs.,	3.4100
Sugar and extract, with tartaric, citric and malic acids,	28.9480
Albumen,	1.8310
Casein,	1.8050
Dextrine or gum,	4.7690
Fibre with coloring matter,	8.8060
Matter separated from fibre by a weak solution of potash,	2.8510
Proximate organic bodies in 1000 lbs.,	49.0100
Water,	947.5800
Total,	1000.lbs.

Egg Plant.—*Solanum melongena.*—The egg plant is a native of Africa. It was introduced into Europe in 1797, soon after the tomato. It is a tender annual, requiring a warmer and longer season to mature in than the plant previously described. It is highly esteemed for the general purposes to which the tomato is applied; but it is less cultivated than that plant in the Northern and Eastern States, owing probably in part to the short time that has elapsed since it was first brought into general notice in this section, and in part to the difficulties attending its cultivation.

The varieties generally grown are the *oval-shaped purple*, the *globular-shaped purple*, the *oval-shaped white*, and the *globular-shaped white*.

The only part of the plant analysed was the fruit, which was a fine specimen of the *oval-shaped purple*, raised and furnished by Mr. Rathbone, of Kenwood, Albany. Its longitudinal diameter was ten inches, and its transverse diameter six inches. It was in the proper state for cooking.

Percentage of water, dry matter, and ash.

275 grains gave of		Per centum.
Water,	251.22	91.353
Dry matter,	23.78	8.647
Ash,	1.66	0.604
Percentage of ash calculated on the dry matter,		6.981

Composition of the ash.

Carbonic acid,	4.725
Silicic acid,	1.700
Sulphuric acid,	4.740
Phosphoric acid and peroxide of iron,	28.775
Lime,	0.075
Magnesia,	1.370
Potash,	20.510
Soda,	31.970
Sodium,	1.135
Chlorine,	1.730
Organic acids,	2.200
	98.930

Water constitutes a large proportion of the fruit,—about 91 per cent. The percentage of ash calculated on the dry matter, does not differ materially from that of the tomato. The ash of the fruit of this plant, like the ash of the fruit of the plant previously described, is made up principally of the phosphates of the alkalies; or of phosphoric acid, potash and soda. These three bodies constitute about 81 per cent. of its inorganic matter. It is more rich in phosphoric and sulphuric acids and soda, and less rich in chlorine than the tomato.

Proximate organic analysis.

	With the water.	Without the water.
Sweet matter and extract, with a peculiar bitter principle,	3.040	50.964
Starch with a little fibre,	0.365	6.119
Albumen,	0.255	4.275
Casein,	0.200	3.353
Dextrine or gum,	0.370	6.203
Fibre,	0.760	12.741
Matter separated from the fibre by a weak solution of caustic potash,	0.975	16.345
Water,	91.350	100.000
	97.318	

The fruit, when dry, has a peculiar honey odor. It contains, besides the bodies given in the foregoing analysis, a small quantity of an oil which is volatile, and a little wax which is mostly spread over the outside of the fruit, imparting to its surface a greasy feel. The bitter principle which was obtained with the sugar and extract, can be slightly tasted in the fresh fruit.

About 50 per cent of its dry matter is sugar and extract. The dried fruit has a decided odor of honey, and a pleasant, sweet taste. The matter separated from the fibre by a weak solution of caustic potash, resembles albumen. The loss in the above analysis is owing in part to the oil and part to the bitter principle, which were volatilised.

Amount of the several bodies, organic and inorganic, in 1000 lbs. of the fresh fruit. Calculated from the foregoing analyses.

	Expressed in lbs. and decimals of a lb.
Carbonic acid,	0.2889
Silicic acid,	0.1038
Sulphuric acid,	0.2898
Phosphoric acid and peroxide of iron,	1.7595
Lime,	0.0046
Magnesia,	0.0828
Potash,	1.2496
Soda,	1.9525
Sodium,	0.0686
Chlorine,	0.1057
Organic acids,	0.1341
Amount of ash in 1000 lbs,	6.0400
Sweet matter and extract,	40.9900
Starch with a little fibre,	4.9220
Albumen,	3.4383
Casein,	2.6967
Dextrine or gum,	4.9889
Fibre,	10.2476
Matter separated from the fibre by a weak solution of potash, resembles albumen,	13.1465
Amount of proximate principles in 1000 lbs.,	80.4300
Water in 1000 lbs.,	913.5300
Total,	1000 lbs.

About 86.3 lbs. in the thousand is solid matter: of this 6 lbs are made up of inorganic and the rest of organic matter This calculation was made to show the real or actual composition of the fruit.

Insect in Cherry Trees.

EDS. CULTIVATOR—Enclosed is a section of the trunk of a cherry tree five or six years old, containing an insect in its various stages, from the egg to the perfect insect, of whose name and history I am not acquainted; but which has proved fatal to one of my trees, and from their numbers in this, may prove so to more, if a remedy cannot be found. My attention was called to the tree soon after the opening of the leaf buds, from their withering up, as though seared by fire or frost—the latter of which I supposed to be the cause; but on examining the tree closely, I discovered small perforations through the bark, and penetrating the wood, as may be seen in the section enclosed. The insect appears to be a stranger in this section, nor can I find any account of it in any work in my possession. Its history, if known, may be of use not only to myself, but to many of the readers of "The Cultivator." WILLIAM WANZER. *New-Milford, Litchfield co., Ct., 11th of 6th mo.* '49.

The insect above described is a beetle evidently belonging to the family *Bostrichidæ*. It closely resembles the species described by KOLLAR as the *Bostrichus dispar* (*Apate dispar* of some naturalists)—and may be identical. If so it has probably been imported in trees. It is very destructive when it becomes numerous; as two or more generations are produced in a season, and the tree is bored in every direction; and though the holes are not larger than would be made with a common knitting-needle, the effect is to derange the circulation of the sap; the health of the tree is soon impaired, and its life finally destroyed. As to a remedy, Kollar observes—"With respect to the destruction of these insects, their history shows, that the only way is to cut off the branches that are infected, and should the trunk be also attacked, the whole tree must be cut down, and conveyed out of the orchard; which need not be regretted as it would soon die of itself." EDS.

Test for Good Limestone.

The best lime for agricultural purposes is that which is lightest, whitest, and softest to the touch; the purest and strongest lime is always found the lightest. If then by calcination limestone loses much of its weight by the process; if the lime-shells are extremely light, and require, for slaking them fully, a large portion of water; if they are a considerable time before they begin to fall; if, during the process of burning, the limestone is not disposed to run or become vitrified; if it increases very much in bulk by slaking, and the lime is of a pure white, and fine and light to the touch, it may be set down as very good, and should be used in preference to other lime not possessing the same qualities. —*English Paper.*

DUNG OF POULTRY.—Pigeons' dung is of a very powerful nature, but hot and stimulating, and abounds with the volatile alkaline principle. It contains uric acid, and gives by distillation carbonate of ammonia—yields subtle matter in water, and is very liable to ferment. It also possesses an acid of a very peculiar nature, which increases when the matter is diluted with water, but gradually gives place to ammonia, which is at last abundantly exhaled. It affords carbonate of ammonia, and leaves as a residuum carbonate of lime and saline matter, chiefly common salt. It should be applied fresh, as fermentation diminishes the quantity of soluble matter. The dung of poultry contains silica, and phosphate and carbonate of lime; and, along with the dung of pigeons, has been dried, broken down and powdered, and mixed with earthy substances, and applied during moist weather, and covered by harrowing of the seed, at the rate of forty or fifty bushels an acre. If used fresh, the quantity must be small; but as a very small quantity of such excrements will come into the possession of the farmer, the readiest and probably the most economical application will be to spread it evenly on the top of a dung heap, just before its being turned over, which will mix the substances, and extend the benefits equally. The excrements of animals, as birds, dogs, swine, poultry and pigeons, that eat food of nature and preparation similar to that of man, is of much better quality as a manure than that of those animals, as cows and horses, that are fed with grass and cooked food: but the difference may be partially owing to the constitutional structure of the animal, and the nature of the digestive organs.—*Eng. Farmers' Herald.*

GLASS VARNISH.—The *Maine Farmer* states that a kind of soluble glass may be made, which, being applied to wood, will render it fire-proof. Take fifteen parts of powdered flint or quartz rock, ten of potash, and one of charcoal. These are melted together, then worked in cold water, then boiled with five parts of water, in which it will dissolve. It may then be applied to wood work or any other substance. As it cools it gelatinizes and dries into a transparent varnish or glass, and the substance thus becomes coated in such a way as to render it incombustible. The editor adds that he has never tried the experiment himself, but that it would not be difficult or expensive to give it a trial.

COFFEE A DISINFECTANT.—It is said that the *odor of roasting coffee* is a most powerful disinfecting agent. Take a red hot shovel with a few kernels of coffee upon it, and it will remove entirely the most offensive odor arising from decaying animal or vegetable matter, or from any other source; a fact worth knowing where the cholera prevails. A friend of ours assures us that he has tried the article as recommended and it answers the purpose effectually.

Notices of New Publications.

EUROPEAN LIFE AND MANNERS; IN FAMILIAR LETTERS TO FRIENDS. By HENRY COLMAN, author of European Agriculture, and the Agriculture of France, Belgium, Holland and Switzerland. In two volumes. Published by CHAS. C. LITTLE and JAMES BROWN, Boston.

The author of these volumes is extensively known to the American public through his various writings on agriculture, particularly his large and popular work entitled "European Agriculture and Rural Economy." The work before us may be said to constitute his personal narrative during his residence abroad. The letters were not originally designed for publication; but appear in the present form at the solicitation of Mr. Colman's friends, to whom they were all addressed. Mr. C. enjoyed peculiar facilities, from the society to which he was introduced in Europe, of making himself acquainted with "life and manners," in all their phases, and a person of his habit of observation and faculty of delineation could not fail of making interesting and truthful sketches. That the descriptions are *interesting*, we can, for ourselves, affirm, having perused them with great satisfaction; and on the credibility of the witness, we have the fullest confidence in their truthfulness. We recommend the Letters as giving an insight into the condition of European society and manners, not often to be obtained from books or even by personal observation.

BRITISH AND FOREIGN MEDICO-CHIRURGICAL REVIEW, or Quarterly Journal of Practical Medicine and Surgery.

This valuable foreign work, is re-published in New-York, by Messrs. G. & R. S. WOOD, and is afforded at three dollars a year. No person engaged in the practice of the "healing art" should be without it.

PLOW, LOOM AND ANVIL.—A prospectus for the second volume of this periodical will be found in this number. The senior editor, J. S. SKINNER, Esq., is to be sole conductor of the work for the present; his son, Mr. F. G. SKINNER, having received the appointment of Collector of Agricultural Statistics, in the Home Department, has withdrawn from editorial charge of the P., L. & A. We presume the work will be continued with no abatement of the interest and spirit which it has heretofore exhibited. Its present editor has been engaged in conducting agricultural journals for thirty years, and is well known throughout the whole country.

Eaton's Agricultural Chemistry.

EDS. CULTIVATOR—Be pleased to allow me the use of an odd corner in *The Cultivator*, that I may introduce to your readers a new work, which will be found to possess great practical value by those willing to examine it. Its title is "A Text Book on Agricultural Chemistry, for the use of Academies, Schools and Agriculturists: comprising that portion of elementary chemistry which is necessary to a full understanding of the changes connected with vegetable organization, and an examination of the different manures, soils, crops, &c., compiled in part from the writings of Petzholdt, Johnston. Liebig, and others.'

The author of this work, Mr. A. K. EATON, is a graduate of Hamilton College, and by profession, a teacher. Since his graduation, he has devoted himself, with untiring industry and perseverance, to studies and pursuits in natural science, which have fitted him for successful authorship in his chosen department. He is not a mere theorizer; nor can it be justly said of his book, that it was "edited by a pair of scissors." Although following in the track of the eminent authors mentioned in his title-page, he has received nothing upon trust, but has carefully subjected the principles laid down by them to the test of his own experiments. These experiments and principles he has set forth in language free from unexplained technicalities, and easy to be understood. The result is, a treatise eminently practical, and sufficiently extensive for ordinary purposes. It is published by H. H. Hawley & Co., of Utica. E. N.

Answers to Correspondents.

GYPSUM.—"A FARMER'S BOY," Westchester county, N. Y. Gypsum is a compound of lime and sulphuric acid. Both lime and sulphur are taken up more or less, as constituent elements of plants. Of course they are "soluble." Gypsum may, no doubt, prevent the escape of gases arising from manure; ammonia, being an alkali, will combine with the acid of the gypsum, and is thus *fixed*. Get Prof. Norton's edition of *Johnson's Catechism of Agriculture*, which is to be had at most book-stores in New-York and Albany.

TIME TO SET OUT CEDAR TREES.—G. L. S., Rutherford county, N. C. Spring is considered the most favorable season. If the trees are not too large, and the work is done carefully, they generally live.

"OUGHT SUCKERS TO BE TAKEN FROM CORN?" We do not think this question has been fairly settled. Probably much depends on the kind of corn. With our northern varieties, the suckers will frequently bear ears, especially if the main stalks are rather thin. But the southern corn seldom produces ears on the suckers, and hence it is argued that the suckers only draw nourishment from the productive stalks. We would advise that you make an experiment by cutting or pulling out the suckers in alternate rows through a field, and measure the product separately.

GRASS LAND.—See an article on this subject in this number.

We have no knowledge of "Robinson's drying machine," farther than that given in our May No. In reference to the other inquiries of G. L. S., will give an article in our next.

Agricultural Shows.

NEW-YORK STATE SOCIETY.—At Syracuse, 12th, 13th and 14th of September.

SENECA COUNTY, N. Y.—At Ovid, 4th and 5th of October.

WASHINGTON COUNTY, N. Y.—At Whitehall, 19th and 20th of September.

SARATOGA COUNTY, N. Y.—At Mechanicsville, 11th and 12th September.

RENSSELAER COUNTY, N. Y.—At Troy, 25th, 26th, and 27th September.

DELAWARE COUNTY, N. Y.—At Delhi, 3d October.

JEFFERSON COUNTY, N. Y.—At Watertown, 26th and 27th of September.

WORCESTER COUNTY, MASS.—At Worcester, 20th of September.

MIDDLESEX COUNTY, (Mass.)—At Concord, Oct. 3.

NEW-HAVEN COUNTY (CT.) AG. and HORT. SOCIETY.—Exhibition at New-Haven, 25th, 26th, and 27th.

CRANBERRIES.—The *Massachusetts Plowman* states that cranberry meadows are much improved by covering them with poor sand—the poorer the better—for if manure or good loam is applied, the growth of grass is encouraged and proves injurious to the cranberry. Sand may be spread on in winter, in the spring, or soon after the cranberries are gathered. Flooding the ground in winter—the water to be on till May, is beneficial.

Notes for the Month.

COMMUNICATIONS have come to hand since our last, from F. Holbrook, S. B. Rockwell, L. Durand, James Avery, S. W., J. D. Remington, Lotan Smith, P., A Virginian, W. S., S. Austin, A Farmer's Boy, Agricola, J. R. Stafford, G. L. Simmons, W. L. F., J. P. S., I. Hildreth.

BOOKS, PAMPHLETS, &c., have been received since our last as follows:—European Life and Manners, by HENRY COLMAN, 2 vols., from the publishers, Little & Brown, Boston—Report on the Breadstuffs of the United States, by LEWIS C. BECK, M. D., from the author —Allen's American Farm Book, new edition, from the publisher, C. M. SAXTON, New-York.—A Text-Book on Agricultural Chemistry, by A. K. EATON, from the author.

☞ The communication "TO WESTERN WOOL-GROWERS," from Portage county, Ohio, is deemed too extravagant in its statements to be useful to the public.

VICTORIA RHUBARB.—We received from Mr. JAMES WILSON, of this city, a parcel of this variety of *pie-plant*, and after a fair trial, we think it decidedly the best we have ever tasted. The stalks are large,—though not so *long* as some kinds,—and the pulp is tender, free from fibre, and so pleasant an acid that it was preferred for tarts and pies to any other article to be obtained at that season of the year.

PROFITABLE SWINE.—S. HUSTON, Esq., of Coxsackie, informs us that Mr. M. HALLOCK, of that town, has a sow which raised forty pigs within the year 1848, which sold for $275,—none of them being kept over nine months. The same sow has now fifteen fine pigs.

MALT-DUST OR "SPROUTS."—Barley, in undergoing the process of malting, sprouts, and after the grain or malt is dried, the rootlets are rubbed off. One hundred bushels of barley are said to yield four or five bushels of this dust. It is a very powerful manure, and is used in England as top-dressing to different crops. It is sometimes used in forming composts. Owing to the large proportion of nitrogen it contains, its tendency to fermentation is great; and on this account it is valuable to mix with peat or coarse vegetable matters. A small quantity of the dust, say four bushels to a common cart-load of peat, laid up in layers with the peat, will soon reduce it to good manure. A handful of this dust to a hill of Indian corn, is a strong stimulant to growth.

SPECIAL PREMIUM ON SHEEP.—A gentleman in Connecticut has offered the sum of $100, to be awarded as a premium on Merino sheep at the coming Fair at Syracuse. The requisitions specify that the sum shall be paid—"for the best twenty-five full blood Merino ewes over one year old, and for the best twenty-five full blood Merino lambs, *less* than one year of age, all to be owned by one person. They must not be from any Saxon cross, and must have been shorn within the present year. Regard being had to size and constitution, with quantity and quality of wool. The stake open to the whole country." The judges selected to award this premium, are J. G. Strean, Washington, Pa.; Francis Rotch, Butternuts, N. Y.; J. D. Patterson, Westfield, N. Y.; A. C. Russell, Kirtland, Ohio; L. G. Bingham, Williston, Vermont.

EARLY LAMBS may be taken from the ewes this month, and turned into good, sweet, but not very long feed. They should be kept out of the sight and hearing of their dams, till they are weaned. Both the lambs and ewes will thus be much more quiet, and will become reconciled to their separation much sooner, than if they were within the sound of each other's voices.

SALTING HAY.—The practice of salting hay for the purpose of *curing* it, or salting it for the purpose of *making it weigh better*, as is sometimes done when damaged or cheap salt can be obtained,—we think is improper. As a general rule, it is best to allow animals what salt they will eat *voluntarily*, rather than to force them to eat more than they want. It may do to salt a load of hay that has been injured, or which is of inferior quality, to be fed to stock occasionally, as a condiment.

FALLOWS should be kept perfectly clean. The great object is to clear the ground from foul plants; hence, the cultivator, the harrow, or the plow, according to state of the soil, should be used so often that the weeds cannot grow. This operation also keeps the ground well pulverised, opening it to the decomposing influences of the air, which is of great advantage on tenaceous soils, bringing the mineral elements into a soluble state.

MATERIALS FOR MANURE.—When the labors of haying and harvesting are interrupted by cloudy weather, men and teams may be turned to good account in digging and carting muck, marl, or the coarse grasses of bogs, to the barn-yard. Or these articles may be piled up to be used as wanted. Peat is much better for being exposed to the action of frost, which tends to dissipate the acid and render it fine.

LABORERS.—We invite attention to the advertisement of the Commissioners of Emigration, in the present number, in reference to the facilities they offer for supplying laborers in agriculture and other branches of industry. We have known several instances where farm laborers have been procured through this agency, and the persons gave good satisfaction to their employers. An institution of this kind, properly managed, cannot but be useful to the country.

MR. VAIL'S SALE OF SHORT HORNS.—We expected to have obtained for this number, a list of the animals sold and the prices obtained at this sale. Not having received such a list, we are only enabled to give the following facts, from a letter received from Mr. VAIL. Twenty of the animals in the catalogue were sold, and brought the aggregate sum of $2015; four calves from three to seven weeks old, (not in the catalogue,) brought $142.50; those over a year old, averaging $100.75 each. The purchasers were as follows:

Dr. Niles, Washington county, N. Y., one cow

H. Drinker, Wm. Jessup and Thomas Nicholson, of Montrose, Susquehannah county, Pa., two cows and one bull.

H. B. Burgwyn, Halifax, North Carolina, three heifers and two bulls.

Benjamin Jean, Carthage, Jefferson county, N. Y., one heifer and one bull.

Mr. Ogden, for the Quebec Agricultural Society, one heifer.

P. L. Holton, Vermont, one bull.

D. D. Campbell, Schenectady, N. Y., one heifer and one bull.

S. Percivall, Waterville, Me., one bull.

Thomas Hillhouse, Watervliet, N. Y., one bull.

Mr. Starkweather, Boston, one heifer and one bull

H. Harrington, Troy, N. Y., one bull.

T. P. Remington, Philadelphia, Pa., one bull.

CANADA THISTLES in grass-lands should be cut close to the ground, while they are in blossom and before any of them have formed seed. They may start more or less, and should be again cut the latter part of the season—making it an invariable rule that none of them shall go to seed. This mode strictly pursued, will

generally eradicate them, especially if the growth of grass is so encouraged that a close sward is formed. In cultivated fields, successive and thorough plowings, or working the ground with a cultivator with very sharp teeth, will destroy them. But to do this the top must not be allowed to grow. The leaves of a plant are its breathing organs, and no plant can live long without them. Deprive it of these, and the root must die, however deep it may run into the ground, or whatever may be its tenacity of life under other circumstances.

WESTERN VIRGINIA.—In our May number we gave an inquiry in relation to the country "between the White Ridge and Allegany mountains" in Virginia. In reference to this inquiry, Mr. T. B. MCROBERT, of Williamsville, Va., writes—"this section, in its climate, soil, minerals, mineral-springs, water power, &c., is certainly one of the most desirable in North America. But for want of proper roads, its immense resources have laid dormant. Our last legislature passed several rail-road bills, which will have the effect of calling public attention to this part of the country." Mr. MCROBERTS has issued a prospectus for the publication of a semi-monthly paper, to be called the "*Western Advocate*," the design of which is to promote the varied interests of Western Virginia. It is to be published at Lexington, Va., semi-monthly, at $1.25 in advance, $1.50 if paid in six months, $1.75 at the end of the year. Mr. McR. states that he was the publisher of the *Virginia Farmer*, twelve years ago. Persons wishing to subscribe for the *Advocate* are directed to address JAMES GREY, Esq., Deerfield, Augusta co., Va.

SCARE-CROWS.—The *Massachusetts Plowman* observes that scare-crows, to be most effective, should be made to resemble the object of which the crows are most afraid, that "is a real living man, lying in wait with his gun." To make a scare-crow it is therefore directed to take an old flour barrel, with one head or no head. Set it in the part of the field most exposed. Then take any old coat or frock, stuff it a little and let it hang as easy as when on a man. Now place your stuffed coat in the barrel and let one arm or both hang over a little. Put a hat on too and let it cover the face so close that it cannot be seen. This saves all trouble of making a face like a man's, and the barrel saves all trouble of being particular in the formation of the feet and legs. To complete the work place a few pine boughs over the whole. The boughs should half conceal the man. An old rusty gun or a stick of the right shape, should be placed in the hands of the man.

DO KINGBIRDS EAT WORKING BEES?—The kingbird has been regarded as one of the greatest enemies of the apiarian, in some situations, from the fact that it is a devourer of bees. Wilson, the ornithologist, suggested that the bird only picked out the *drones*, and never injured the working bees. Some close observers have come to the same conclusion. One writer states that to test the matter, he killed a number of the birds, and though he found many drones in their gizzards, he could find no working bees in them. What has been the observation of others?

POTATOES MIXING AT THE ROOT. A correspondent of an exchange paper wants to know if different kinds of potatoes will mix at the root. It is, we suppose, a somewhat common idea among farmers, that different varieties of potatoes, if planted near each other, will intermix, so as to produce new kinds. We are convinced the idea is incorrect. We do not believe it is possible for potatoes to mix in the tubers, any more than different kinds of turneps to mix in the bulbs. No one supposes such a mixture possible in regard to turneps, beets, or carrots. The different varieties may mix, to be sure, but they must mix in the *blossom*, and the *seed* produced by the blossoms containing such intermixture, must be planted in order to obtain the new variety thus originated. So it is with potatoes; the *balls* which grow on the top of the stalk, contain the seed; and by plants being raised from them, and in this way only, can new kinds be had.

Prices of Agricultural Products.

New-York, June 15, 1849.

FLOUR—Genesee, per bbl., $5a$5 25. Western, $4 62a $4.-75.

GRAIN—Wheat, per bush., Genesee, $1.30a$1.40—Ohio 99c.—Corn, Northern, 64a65c.—Rye, 58c Oats, 34a35c.

BUTTER—best, per lb., 18a20c.—western dairy, 10a15c.

CHEESE—per lb., 5a7c.

BEEF—Mess, per bbl., $11.50—Prime, $8.50.

PORK—Mess, per bbl., $10.25—Prime, $8.50.

LARD—per lb., 6½a7c., for good and prime.

HAMS—Smoked, per lb., 7a9c.

HEMP—American dew-rotted, per ton, $155.

HOPS—per lb., 6½a7c.

COTTON—Upland and Florida, per lb., 7a8¼c.—New Orleans and Alabama, 7¾a8½c.

WOOL—(Boston prices.)

Prime or Saxon fleeces, per lb.,	40a43c.
American full blood Merino,	36a38c
" half blood do.,	31a33c.
" one-fourth blood and common,	29a30c.

REMARKS.—The demand for flour and grain is moderate, at quotations. Provisions are firm.

Wire for Fences.

WIRE of the best quality, of all sizes, bright, annealed or galvanized. Price from $7 to $12 per 100 lbs. When galvanized, 2½ cts. per lb. extra. Wire is best galvanized, as this keeps it bright, and it lasts much longer. A. B. ALLEN & CO.,
July 1—1t. 189 & 191 Water street, New-York

Wire for Fences.

BRIGHT and annealed, at 7 cts. per lb., for sale at the Albany Agricultural Warehouse. Galvanized Iron Wire furnished to order at manufacturers' prices. HORACE L. EMERY.
July 1. No. 369 & 371 Broadway, Albany, N. Y.

Offered

FOR SALE, the equal one-half interest in a *Nursery* of Fruit and Ornamental Trees, permanently established and beautifully located in New Jersey, within two hours ride, per Railroad, of New-York—six trains of cars passing daily along side and in full view of the nursery. The depot within five minutes walk of the grounds—containing from 50,000 to 100,000 thrifty seedling plants, a portion of which are ready for market—the greatest part ready for working this season. No other nursery in the place.

This is a rare offer, circumstances obliging one of the proprietors to make a change. The whole can be had if particularly required. For confidential particulars, address, *post paid*, J. J. SCOFIELD, Morristown, Morris Co., N. J.
July 1, 1849.—1t.

Office of the Commissioners of Emigration,

New-York, June, 1849.

THE COMMISSIONERS OF EMIGRATION respectfully solicit your attention to the facilities which are furnished by the Institution for the supply of laborers in agriculture, Railroad Making, House Building, Factory Labor, and almost every department of industry.

There are now in the care of the Commissioners, several hundreds of men, women, and children, and an inexhaustible supply arriving, anxious for employment, and willing to engage their services at the current prices of labor. Among them are many able-bodied females, who either have been accustomed to work on the farm or in dairies, or, who with little instruction would be able to do so, who would gladly accept situations of that character, did they but know where to find them. Believing also, that in many parts of this and other States of the Union, there is a dearth of laboring men and women, the Commissioners are desirous of extending, as widely as possible, the knowledge of the number of people desiring employment, and of receiving applications for them from those desiring their services.

The Commissioners will gladly receive such applications, and exert themselves to supply them in the best manner.

Communications, addressed to them, and enclosing the amount necessary to forward to the writers such persons as they require, will be duly acknowledged, and in all cases, if the employers desire it, a bargain will be made with the laborers that the first part of the wages agreed upon, shall be retained by the employer to reimburse the latter the amount expended in forwarding them.

Applications for laborers should state

1st. The occupation.
2d. The sex.
3d. Whether adults or children, or both are required.

Communications should be addressed to,

JOHN H. GRISCOM,
General Agent, Commissioners of Emigration, New-York.
July 1—1t.

Ohio Strawberry Plants.

BURR'S SEEDLINGS; Burr's New Pine, Ohio Mammoth, Sciota, Burr's Old Seedling, and Columbus varieties; for sale at 50 cents per doz. Orders directed to HORACE L. EMERY, Agricultural Warehouse, Albany, will be attended to for August planting.

July 1.—1t.*

THE HORTICULTURIST,

AND

Journal of Rural Art and Rural Taste.

EDITED BY A. J. DOWNING,

Author of "Fruits and Fruit Trees of America." "Landscape Gardening," "Cottage Residences," &c., &c.

THE first number of the fourth volume of this work, was issued on the 1st of this month (July.) and the future numbers will be issued regularly on the first of each successive month. It is devoted,

1. *To* GARDENING, *in a thoroughly practical as well as scientific sense.*

2. *To the* DESCRIPTION *and* CULTIVATION *of Fruit Trees.*

3. *To Gardening as an* ART OF TASTE, *embracing essays, hints and designs on Ornamental and Landscape Gardening.*

4. *To* RURAL ARCHITECTURE, *including designs for Rural Cottages and Villas, Farm Houses, Gates, Lodges, Ice Houses, Vineries, &c., &c.*

In short, this periodical may be considered a continuation of the various works on Rural Subjects, by its Editor, which have already been so favorably received by the public. It is now his object to assist, as far as possible, in giving additional impulse to the progress of Horticulture, and the tasteful in Rural Life; subjects now so largely occupying all those interested in country pursuits.

NOTICES OF THE PRESS.

All readers who have the least interest in rural affairs, should take a work which is exerting such a manifest influence upon the taste of the country. Its valuable correspondence furnishes from time to time the fruits of the experience of our most intelligent cultivators, and it is scarcely necessary to repeat, that Mr. DOWNING'S labors in the department of Rural Architecture and embellishment give him substantial claims to public respect Their effects are already seen in every part of the country, in improved cottages, gardens, green-houses, pleasure-grounds, fencing, &c The present number opens with some capital suggestions concerning the improvement of Country Villages.—*Newark Daily Advertiser.*

We would call especial attention to this work. We have subscribed for it from its first number, perused it carefully and practised upon its teachings, and do not hesitate to pronounce it a work of great merit and usefulness.—*Concord Freeman.*

Another volume begins with the next or July number. We most warmly commend this publication to all interested in Rural Architecture, or the improvement of gardens, orchards or country seats There is no publication so well calculated to exert an influence upon the taste of the country, in the departments to which it is devoted. It enjoys already a large circulation.—*New-Jersey State Gazette.*

TERMS—Three Dollars per vol. or year. Two copies for $5—in advance.

☞ The back vols. can be furnished to new subscribers.

☞ All business letters to be addressed to the Proprietor, LUTHER TUCKER, Albany N. Y., and all communications to the Editor, A. J. DOWNING, Newburgh, N. Y.

The Farmer's Encyclopædia,

IN one volume, royal octavo, 1165 pages, beautifully bound; containing 17 fine plates, and numerous wood cuts. Edited by GOUVERNEUR EMERSON. A standard work of reference upon all subjects connected with farming and country life.

"Of all the Agricultural works that have been lately published, this appears the most likely to be of real service to the practical farmer."—*Central New-York Farmer.*

"The Farmer's Encyclopædia is a real treasury of *practical* information, wherein the experience of all ages and countries is *carefully posted up* to the present day, and admirably arranged for convenient reference"—*Dr. Darlington.*

"It is a mine of wealth—no farmer should be without this truly valuable book."—*Burlington Gazette.*

"An excellent work fit to be distributed in premiums by Agricultural Societies. How much better, and in better taste, than the amount of its cost in money."—*John S. Skinner.*

Sold by Carey & Hart, *Philadelphia*; C M. Saxton and John Wiley, *New-York*; Luther Tucker, and W. C. Little, *Albany*; Derby & Co., *Buffal*; W. D. Ticknor & Co., and B B. Mussey, *Boston*; W. H. Derby & Co., and Ely & Campbell, *Cincinnati*; Whiting & Huntingdon, *Columbus*; Norton & Beckwith, *Louisville, Ky*; J. B. Steel and Woodbridge & Co., *New Orleans*; M. Boullemet, *Mobile*; W. D. Skillman, *St. Louis*; N. Hickman, *Baltimore*; A. Morris, *Richmond, Va.*; H. D. Turner, *Raleigh, N. C*; F. Taylor, *Washington, D. C.*

July 1, 1849.—1t.

The New Volume and New Prospectus of

THE PLOUGH, LOOM, AND ANVIL.

POPULAR as this Jousnal is, and so far successful beyond any we have heretofore established, its income does not yet exceed *its own expenses*; leaving the Editors to live on air or hope; neither of which is very substantial diet. Now, as we believe that we have not a friend who would willingly see the man wanting bread, who has been teaching others how to make it all his life, we at once frankly solicit our present patrons to use their influence to *average one* more subscriber each, and then "*The Plough, the Loom and the Anvil*," and those that are working at it, will be doing what is commonly called a *safe business*, and not until then. We are truly sorry to be under the necessity of making this appeal; for, could we afford it, we would *rejoice*, as on past occasions, to show that we would most willingly work as hard, gratuitously, for the great industrial interests of the country, as we are now doing in the hope of at least a scanty support.

TERMS of the Plough, Loom, and Anvil, $10 for five subscribers; $5 for two, and $3 for one; or $5 *for two years' subscription*; 64 pages a month.

It is not in the way of remuneration, but to evince our gratitude for the kindness we solicit, and at the same time to promote the perusal of works which every farmer ought to read, that we hereby make the following offer:—

We engage to forward to every one who will send us by mail, at our risk, $10 for a club of five subscribers, or $5 for two subscribers, or the same for the first and second volumes; a copy, at his own option either of Mr. Carey's admirable work—"*The Past, the Present, and the Future*," or a copy of Col. Randall's book on "*Sheep Husbandry*"—decidedly the best work on the subject that has been offered to the American public. To any one making up and sending us in like manner, $20 for ten subscribers, we will supply a copy of "*Von Thaer's Principles of Agriculture*," for a single English copy of which, we gave $12 in Boston a year ago, considering it a work of inestimable value. To all who may, in like manner, by mail, at our risk, forward $3 for one subscriber, we will send a copy of "*The Elements of Agriculture*,"—the postage of which will not be over four or five cents.

Address, J. S. SKINNER 81 Dock Street, Philadelphia.

☞ We shall feel and endeavor to deserve and requite the favor, to any Proprietor of a public journal, who shall have the kindness to give the above one insertion, for the benefit of one of the oldest of the fraternity of Editors. J. S. SKINNER.

July 1.—1t.

Kinderhook Wool Depot.

THE success of this enterprize, and the steady increase of business during the past 4 years, has induced the subscriber to associate with him Mr. Thomas M. Burt, as a partner in the business. The integrity and correct business habits of this gentleman, are well known to many prominent men throughout the State; and for more particular information, reference may be made to R. H. King, Esq., or John T. Norton, Esq., of Albany.

With increased facilities for extending their business, the enterprise will be conducted on the same principles as heretofore:

1. The FLEECES will be thrown into *sorts* according to *style* and *quality*.
2. A discrimination will be made between wool in good or bad condition.
3. All who desire it can have their clips kept separate.
4. Sales will be made invariably for cash.
5. The charges will be, for receiving, sorting and selling, one cent per pound, and the insurance, which will be 25 cents on $100 for a term of three months.
6. Liberal advances made in cash, on the usual terms.

Wool forwarded from the West and North, should be marked H. B. & Co., Kinderhook, N Y., with the initials of the owner's name on each sack, and shipped to East Albany.

Kinderhook, May 18, 1849. H. BLANCHARD.

After the 1st of June, the business will be conducted under the name and firm of H. BLANCHARD & Co.

Reference may be had to,
Dr. J. P. Beekman, Kinderhook, N. Y.
Benj. P. Johnson, Albany, "
L. A. Morrell, Lake Ridge, "
D. S Curtis, Canaan, "
C. W. Hull, New-Lebanon, "
J. Murdock Wheatland, "
C. W. Richmond, Aurora, "
Nathaniel Sawyer, Cincinnati, O.
M. D. Wellman & Co., Massillon, O.
Freeland, Stuart & Co., New-York City.
R. Carter, Chicago, Illinois.

Haying and Harvesting Tools.

Grain Cradles.—Grant's, and Myers & Bryan's, both premium cradles.
Grass and Grain Scythes—Dunn's and Troy, (premium scythes.)
Revolving Horse Rakes—Wilcox and Downer's, " rakes.
Hand and Gleaning Rakes of various makers.
Scythe Snaths—Clapp's, Lamson's and others.
Sickles, Rifles, Scythe Stones, &c., &c.
Anti-friction Rollers and Cranks for Grindstones.
Grindstones hung complete for use.

Also every Implement, Machine and Seed wanted by the farmer. All warranted. Constantly for sale at the Albany Agricultural Warehouse, Nos. 369 & 371 Broadway, Albany

H. L. EMERY.

☞ Catalogues gratis on application by mail, &c.

Morgan Horse Black-Hawk.

THIS well-known and popular stallion will stand this season, at the stable of the subscribers; terms. $15 the season, payable in cash, or a satisfactory note on demand with interest. For particulars in regard to pedigree and performances, see large bills, and previous volumes of *The Cultivator*. D. & D. E. HILL.

Bridport, Vt., May 1, 1849.—3t.

Portable Self-Acting Cheese Press.

Patented August, 1847, by Chester Stone.

THE most durable, simple, convenient, and economical press known. The weight of the cheese governs the pressure, or it may be graduated as desired. The principle is admirably adapted to packing flour into barrels and other uses. It acts on a double lever purchase, the article pressed being the *power*; or in other words "The cheese presses itself." Its weight is 70 to 100 lbs., occupies but little room, moved on castors or small wheels, and is sold at only $7 to $10, according to size. Already in extensive use in the western part of the State, and only need to be seen to be approved. For presses or exclusive rights to manufacture and sell them in any parts of the counties of Saratoga, Washington, Rensselaer or Columbia, apply to H. VAN OSTRAND,

March 1, 1849.—tf. West Milton, Saratoga Co., N. Y.

Morse's Grey.

THIS celebrated horse will stand the ensuing season at the stable of JAMES RICE, in Spiegletown, three miles north of the village of Lansingburgh. He is a beautiful dapple grey, 15¾ hands high, strongly and finely proportioned; has trotted his mile in 2 minutes and 50 seconds; is a square trotter, and combines first-rate trotting qualities, and great powers of endurance, with unsurpassed gentleness and docility. His colts are justly celebrated for speed, bottom and good temper, are eagerly sought after in the market, and command prices varying from $150 to $500.

The very high reputation of his stock as road horses, and the extraordinary prices they command, render him by far the most profitable horse to breed from of any in the country.

Gentlemen sending mares from a distance, may rest assured that they will have such attendance and keeping as the owners desire, and upon the most reasonable terms. The horse will be under the charge of his former owner, Mr. CALVIN MORSE.

Terms. $10 the season. Insurance to be agreed upon.

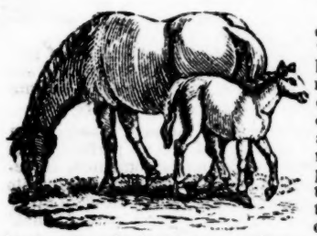
Communications addressed I. T. GRANT, P. M., Junction, Rensselaer county, will receive prompt attention.

May 1, 1849.—3t.

Important to the Public.

HORSE AND CATTLE MEDICINES.

Don't permit your Horses or Cattle to die, when the means of cure are within the reach of all!



THE undersigned has spent several years in the study of Veterinary practice in "London and Edinboro'," he has also availed himself of the researches of Liebig, and other celebrated men, who have contributed so much towards a judicious treatment of animals. The principles of our practice consist in the rejection of general bleeding, and the total rejection of all medicines that experience has shown to be of a dangerous tendency. These remedies act in harmony with the vital principle, and when given according to the directions which accompany each article, they are capable of exciting and increasing the natural functions, without diminishing or destroying their power, hence are safe in the hands of every one

G. H. DADD, M. D.

A LIST OF HORSE AND CATTLE MEDICINES.

Physic balls, 75c. per box.
Alterative ball, 75 c. do
" powders for bad condition, 75c. per package.
Heave powder for diseases of the lungs, 75c. do.
Urine powder for " " kidneys, 75c. do.
Tonic powder for bad condition of glanders, 75c. do.
Cordial drink for inflammation of bowels, 75 c. per bottle.
Liquid blister, 75c. per bottle.
Ointment for promoting the growth of hair, 50c. per pot.
Healing balsam for wounds and saddle-galls, 75c. per bottle.
Wash for inflamed eyes, 50c. per bottle.
Ointment for mange, scratches, old sores, &c. 50c. per bottle.
Embrocation for sore throat, 75c. per bottle.
Hoof ointment for sand crack, brittle hoof, &c., 50c. per bottle.
Horse Liniment, the most celebrated article known in England for lameness of every description, 75c. and $1 per bottle.
Distemper powder, for red water, $1 per bottle.
Worm powders, for the removal of worms from the intestinal canal, 75c. per package.

For sale by STIMPSON & REED, 26 Merchant's Row: also at DADD'S HORSE AND CATTLE MEDICINE DEPOT, Nos. 1 and 2 Haymarket Square, Boston.

Pamphlets describing the diseases for which these remedies are used, can be had gratis.

Numerous Certificates are in possession of the Proprietors, of cures performed by the above medicines. June 1.—3t.

Chemical Manure

Manufactured by "the George Bommer New-York Manure Co."

THIS manure is made chiefly of Fecal Matter from the sinks, in which is mixed a small portion of substances that are of themselves, powerful agents of vegetation, and possess the virtue to fix and retain the ammoniacal gas of the matter.

The great desideratum of the agriculturist has always been, to find out some process by which excrements might be solidified quickly, and all their fertilizing properties so strongly retained, that the manure may dissolve slowly and in proportion to the requirements of the plants, and therefore produce its effects for a time equal to that of farm manure.

This process was at length discovered by the French Chemists, and is now carried out with complete success in more than sixty of the large cities of France, where such manure factories are in full operation.

The "G. B. N. Y. M. C." has established a Factory on an extensive scale near the city of New York, in which they manufacture this kind of manure, and as the fecal matter can be obtained in this country at less expense than in France, the manure will not only be made stronger, but will be sold at a price less than in the French cities, this price being so established as to afford only the reasonable remuneration to which we are honestly entitled, the more so, as its manufacture is not of the most agreeable kind, and withal, troublesome and laborious.

The manufacturing department is under the special charge of GEORGE BOMMER, Esq., who has a perfect scientific and practical knowledge of manure matters generally; and the company has established a standard for the strength of its manure, from which it is intended not to deviate, so that its customers may at all times be furnished with an article really worth what they pay for it.

Our manure is an inodorous grain, and as the substances from which it is made contain of themselves all the elements necessary to the fertilization of the soil and growth of plants, it is extremely well adapted to such purposes.

To manure an acre highly, it requires 12 to 15 barrels, or 36 to 45 bushels spread broadcast. Applied in hills, half of the quantity will suffice. Its application is simple and easy, and printed instructions for its use will accompany each parcel sent to order.

We desire it to be remembered, that our manure has no similarity to another known under the name of "poudrette," although the principal component of ours (the fecal matter) is the same as that which is used in the poudrette, in a much less proportion; our auxiliary substances, as well as our manufacturing processes are altogether of a different nature and kind.

It belongs not to us to eulogise further, the quality of our manure; what we desire at present is, to call upon the members of the agricultural community, to try it! and we have reason to assure them, that they will find it the most profitable manure they have ever used.

PRICES, TAKEN AT THE FACTORY:

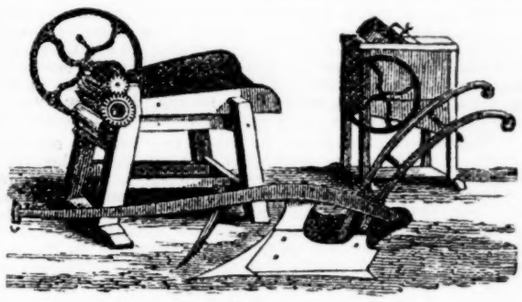
37½ cents per bushel, without package;
50 cents per bushel, packed in Barrels, or
$1.50 per Barrel, package included.

Orders addressed to the above Company, at their office, 72 Greenwich St., New-York, will be promptly attended to.

By order of the Board of Trustees,

New-York, Jan., 1849.—tf GEO. BOMMER, Director.

☞ The factory will be in full operation early in the spring, and manure can be had in April next, and at any time afterwards.



John Mayher & Co.

United States Agricultural Warehouse. 195 Front, one door south of Fulton Street, New-York City,

WHERE they have for sale over 200 different patterns and sizes of Plows, of the most approved kinds and suitable for all kinds of soil, together with the most extensive assortment of Agricultural Implements ever offered for sale in the city of New York, which will be sold at lower prices than they can be obtained at any other establishment. Purchasers will do well to call and examine their stock before purchasing elsewhere. Among the plows advertised will be found J. Mayher & Co's celebrated and unequalled First Premium Eagle D Plow, without doubt the best and cheapest plow to be had in the United States.

N. B. Castings of all kinds made to order.

New-York, Oct. 1, 1848.—tf.

Agricultural Books,

Of all kinds, for sale at the office of The Cultivator.

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WHEELER'S PATENT IMPROVED PORTABLE

Railroad Horse Power, Thrasher & Separator.

THE advantages of the above horse powers are—1. They occupy but little more space than a single horse. 2. They can be moved by the weight of the horse only, by placing them at an angle of 10 or 15 degrees. 3 They are comparatively light and portable, and can be easily transported. 4. They are simply constructed, not liable to get out of order, and move with little friction. the revolving plane gearing without any complex or intermediate wheels, directly into the pinion upon the shaft on which the pully belt runs.

The THRESHERS consist of a small spiked cylinder with a concave plane over it, and a level feeding table. There are several improvements in the overshot thresher. 1. They admit of a level table for feeding, thus enabling the tenders to stand erect, and control the motion of the horse and machine by means of a brake. by which accidents are avoided. 2 In consequence of the spikes lifting the straw and doing the work on the top, heavy substances such as stones, blocks, &c., drop at the end of the table, and are not carried between the spikes, by which they and the machine are broken. 3. The overshot cylinder does not scatter the grain, but throws it within three feet of the machine. 4. This arrangement also admits of attaching a separator high enough from the floor or ground to allow all the grain to fall through it, while the straw is deposited by itself in the best condition for binding. 5. Neither grain nor straw are broken by this machine. 6. The cylinder is longer, which admits of faster and more advantageous feeding; it is smaller and with fewer teeth than ordinary threshers, thus admitting of more rapid motion and faster work with less power; and the diminution of teeth in the cylinder, is fully made up by those in the concave, which is stationary. 7. The separator is a great advantage in diminishing the labor of raking out the straw, as it leaves the grain in the best condition for the fanning mill. Three men. with a single Power, can thresh from 75 to 100 bushels of wheat or rye: or four men with a double Power, 175 to 225 bushels of wheat or rye. or double that quantity of oats or buckwheat, per day. All the above are compact and can be carried where wanted complete, or they may be readily taken apart and packed for distant transportation by a wagon or otherwise.

Price of single Power,	.....	$80
" "	Thresher, ...	23
" "	Separator and fixtures, ...	7
" "	Bands for Driving, etc., ...	5
" "	Saw mill, complete and in running order.	35

The price of the double power. thresher, separator, &c., complete. is $145, including rights of using. The above are sold singly or together as desired.

The above power is warranted to work well and give satisfaction.

A. B. ALLEN & CO.

July 1—1t. 189 & 191 Water street, New York.

Peruvian Guano.

JUST arrived from the Chinche Islands, 730 tons first quality Peruvian Guano. Six years' of experience in the use of this guano by our farmers and gardeners, in the States bordering the Atlantic coast, has proved it far superior to any other, and the cheapest manure they can purchase. It is particularly valuable for wheat and other winter grain, grass, and in fact, all crops grown.

A. B. ALLEN & CO.,

July 1—2t. 189 & 191 Water street, New York.

Wheeler's Patent Horse Power and Threshing Machines.

THE attention of farmers is called to the following extract from the pen of J. N. Rottiers, Esq., of Lafargeville, N. Y., June 8, 1849, it being one of the numerous communications received, concerning the utility of the above celebrated machines:—

"Dear Sir—Wheeler's Threshing Machine, Power, &c , which I purchased of you, has proven satisfactory in every respect. The fact is, the whole of the machine is an admirable simple contrivance, and that any improvement has been made in it, would seem incredible to me, if I had not your word for it.

Practically a farmer, I have used these fourteen years, a great variety of threshing machines, horse powers, &c., but with none am I so well satisfied as with this which I purchased 2 years since.

One year more, and mine will have paid for itself, and then I would not take two hundred dollars for it, and do without another like it.

With a change of horses, and men enough to take away or stack the straw, I believe I can thresh as much per day as with any large Six Horse Power machine, and with as much ease for the team.

But we do not want all the neighbors to help thresh—as three of us and two horses generally thresh from ten to twelve hundred sheaves per day, besides taking care of a large stock of cattle, &c., &c.

It is in fact the very machine which should stand upon the barn floor of every farmer, or where the farm is not large enough, two or more farmers should join, and own one together. Change works, and do their own threshing.

Wishing that it should be generally known as a benefit in time, labor and economy, I have on all occasions deemed it a pleasure to speak in its praise, and several of my neighbors say they shall purchase them."

The question is frequently asked—Why is not a cleaner attached to Wheeler's Thresher? In answer to this question, I will give the reasons, as expressed by an extensive grain grower who has used nearly all kinds of threshing machines, cleaners, &c.

1st. Because the original cost of this Horse Power, Thresher and Separator, together with one of Grant's largest and best fan-mills, is from seventy to one hundred dollars less than any good cleaner and thresher combined can be obtained for.

2d. Because, when purchased separate, they can be used separately, are more portable, simple, and durable; also, the fan-mill is adapted for cleaning all kinds of grain and grass seeds, and the Thresher for threshing clover and timothy.

3d. Because of the great simplicity and reduced friction of machinery, less power is required, no driver is needed, fewer men are necessary to attend to the whole operation, to do the same amount of work, than when the cleaner is combined with the thresher.

4th. Because less grain is wasted—as the fan-mill, when driven direct from the power is more steady, and cleans perfectly with once going through—while, when the cleaner is combined, it derives its motion from the cylinder, which is always varying its speed as the feeder presses fast or slow, consequently blowing away grain with the straw and chaff at one moment, and leaving it half cleaned from the chaff the next—requiring, nine cases in ten, another operation by a fan-mill to prepare it for market.

5th. Because the expense of threshing is much reduced by the great simplicity of these machines, and all can be managed by the hands usually about the farm; and in stormy weather, all can be operated inside of barns, when the laborers and teams could do little out of doors to advantage.

For terms, prices, descriptions, &c., see agricultural papers for 1847, 1848, and 1849, also descriptive catalogues of Albany Agricultural Warehouse and Seed Store, furnished gratis at No. 369 and 371 Broadway, Albany, N. Y., by

July 1, 1849. HORACE L. EMERY.

THE CULTIVATOR

Is published on the first of each month, at Albany, N. Y., by

LUTHER TUCKER, PROPRIETOR.

LUTHER TUCKER & SANFORD HOWARD, Editors.

$1 per ann.—7 copies for $5—15 for $10.

☞ All subscriptions to commence with the volume, (the Jan. No.) and to be PAID IN ADVANCE.

☞ All subscriptions, not renewed by payment for the next year, are discontinued at the end of each volume

☞ The back vols. can be furnished to new subscribers—and may be obtained of the following Agents:

NEW-YORK—M H NEWMAN & Co., 199 Broadway.

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